DOCUMENT RESUME

ED 305 589 CS 009 563

TITLE	Winchester High School Excellence in Education Grant: Reading and Writing across the Curriculum. Final Report.
INSTITUTION	Winchester School District, Mass.
SPONS AGENCY	Office of Educational Research and Improvement (ED), Washington, DC.
PUB DATE	Jun 87
NOTE	82p.; Best available copy. Small type may not reproduce well.
PUB TYPE	Reports - Descriptive (141)
EDRS PRICE	MF01/PC04 Plus Postage.
DESCRIPTORS	*Content Area Reading; Critical Reading; Excellence in Education; High Schools; Interdisciplinary Approach; *Program Descriptions; Program Evaluation; Reading Skills; Student Writing Models; *Writing Across the Curriculum; Writing Exercises
IDENTIFIERS	*Winchester High School MA

ABSTRACT

This collection of documents constitutes the final report of the first year of Winchester High School's federally funded reading and writing across the curriculum program. The project director's report presents an overview of the program and discusses anticipated and actual outcomes, including: (1) more systematic reading and writing activities in content areas; (2) consistent and positive interaction between departments; (3) cognitive improvement in reading and writing skills; (4) improvements in attitudes toward reading and writing by both teachers and students; and (5) dissemination of reading and writing strategies by members of the committee. The bulk of the rest of the report is taken up by appendixes, including an outside evaluation, a mid-year report, student writing samples from a variety of content areas, sample material distributed to teachers, and a sample of organizational framework and coordinator's log. (RS)

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ED305589

WINCHESTER HIGH SCHOOL

EXCELLENCE IN EDUCATION GRANT

READING AND WRITING ACROSS THE CURRICULUM

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FINAL REPORT
JUNE, 1987

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READING AND WRITING ACROSS THE CURRICULUM
PROJECT DIRECTOR'S REPORT

I. Introduction

In the late summer of 1986 Winchester High School was awarded an Excellence in Education Title VI Federal Grant for "Reading, Writing, Speaking and Listening Across the Curriculum." The grant proposal asked for $31, 624.00. The district was awarded $18787.00. As a result, much of the original proposal was modified to accomodate the financial picture. Because of the more limited budget, the scope of the proposal was reduced to focus on reading and writing across the curriculum, delaying the speaking and listening skills segment until a later date. The budget limitations also reduced the summer workshop element of the proposal. Nonetheless, a project director was appointed in late August and, starting in September of 1986, the Project was begun under the auspices of the Federal Government and the oversight of Winchester's Assistant Superintendent of Curriculum and its Director of English.

II. Demographics

Within the first month, the project director recruited a 9-member committee of content area teachers to serve on the project committee. Members of the following Departments served on the committee: social studies (2), science(2), art, foreign language (German), business education, math and special education. As a result of the composition of the committee, students from grades 9 through 12, from every ability level (Special Ed. through Honors), were served by the committee. Approximately 150 students, then, were directly reached by the project.

III. Description of Treatment

The Committee met on a regular basis, at least once a month, for the entire academic year. Beyond that, the Director met with individuals in formal and informal settings on a bi-weekly basis (with most) to stay apprised of the progress of members. The initial project calendar (see Appendix A) scheduled meetings for Sept. 24, Oct. 15, Nov. 12, Nov. 18 (1/2 day InService), and December 17 (all 1986), Jan. 28, February 3, March 11, April 28, May 20 and June 16, 1987. Surprisingly, the committee was able to meet on almost each of those days, the exceptions being May 20 became May 5, June 16 became June 10 and the Feb. 3 and April 28 InService dates became 4 meetings with the project evaluator (Nov. 6, April 28, May 19 & 21) and a Committee-run Faculty Meeting on May 7th.
Only the November 12 meeting was cancelled and it was more than compensated for by the November 18th in-service day.

As mentioned in the mid-year report (Appendix B) a wide variety of materials was made available to the committee members, exposing them to numerous methods and techniques. Many on the committee enthusiastically implemented those activities they found relevant to their courses. Most encouraging was the contribution of materials which certain committee members made! Pages 9 & 10 list a bibliography of texts which the project director and committee used during the year.
Particularly helpful early in the project was the NCTE publication Roots in the Sawdust. The glossary alone (in Appendix C) provided numerous "jumping-off" points for members of the committee.

An on-going aspect of the project which proved most useful, above and beyond the regularly scheduled group meetings, were meetings between the project director and members of the committee. Some were as informal as sitting over lunch in the school cafeteria while many occurred during "unscheduled" times in the project director's office. Whether discussing specific activities or simply generalizing about the project, its goals and values, these meetings helped shape the direction of the project in very practical as well as philosophical terms. Along these lines, another positive, albeit informal, aspect of the project arose which was that non-committee members of the faculty began approaching the project director or committee members for information and/or materials they might use in relation to reading-and-writing-across-the-curriculum. In the case of Irene Michelson, in particular, this happened with increasing frequency. Because Irene works in Special Ed. she is in the unique position of working with teachers across-the-curriculum. Her use of strategies and activities learned during her work with the committee provided interaction and outreach to teachers and students otherwise unotuched by the immediate committee. The project director, on several occasions, was also able to work with teachers or specific departments to "guest-teach" a class or two, using methods the committee had been discussing or implementing.

An additional resource for the committee was the in-service reading comprehension course offered by Dr. Frances Russell through the English Department. This after-school program enabled the committee to listen to and then have discussions with people like Delores Durkin and Bonnie Armbruster, providing even more materials and, better, first-hand interaction with prominent professionals working in the field of reading and writing nationally. The participation of committee member John Limongiello in both programs was a distinct asset in the development of the reading-and-writing-across-the-curriculum project. In the same vein, as was mentioned in the mid-year report, Dr. Russell's help in acquiring the services of Dr. James Squire as the project evaluator provided the committee with a man whose work in this area has been recognized nationally for its valuable contributions to the field.

While the committee did meet regularly and there was a sense of steady progress throughout the year, it is clear, in retrospect, that the demands of the project director must be more specific and that the project director must, at some point, quite literally "teach" more to the committee members. (More on this in "Recommendations" below)

The initial year of any project like this is that of feeling one's way and, while there is a growing body of literature on the subject, there are few working models to learn from. As a result, it was difficult, at times, to focus on <u>exactly</u> what steps to follow and how. Because of the diversity of the project committee, and each teacher's own perceptions of what the project was, there was a certain amount of non-directive leadership exerted in the belief people would, when exposed to the literature and ideas, find those activities and strategies best suited to their style and students. On the whole, this proved successful.

IV. ANTICIPATED AND ACTUAL OUTCOMES/CONSEQUENCES

When embarking on the project in late August/early September, the anticipated outcomes and consequences hoped for could be summarized as five:

1) More systematic reading and writing activities in content areas.
2) Consistent and positive interaction between departments.
3) Cognitive improvement in reading/writing skills.
4) Affective improvement in attitudes toward reading and writing by both teachers and students.
5) Dissemination of reading and writing strategies, etc. by committee members.

Problems anticipated during the formative weeks of the project were numerous. Would teachers volunteer? A survey done by the project director in May/June of 1986 indicated that, although most staff believed reading and writing was important and necessary, few felt a need "to pursue it in any depth" due to already overburdened work loads. It was only after a memo offering a cash stipend was distributed that the final committee group was established. For many teachers, this was seen as another form of extracurricular activity, no matter how noble its goals.

Other problems anticipated had to do with: a fear of teacher concern over Content ("I have to cover all the material in the book, " for example); the project director's concern with the district's failure to have previously stated goals regarding the development of active learners and critical thinkers; the Assistant Superintendent's question of "in whose *voice* is the curriculum to be learned (the teacher's or student's)?" ; the awareness that the student body was passive and (test-score) achievement-oriented --- and that many teachers were, too. The Assistant Superintendent also expressed concern over the evaluation of the project --- how could it be evaluated in measurable, if not precisely quantifable, terms? All these concerns proved to be legitimate and were met with a variety of responses during the year. Happily, there were no "surprises" in terms of unanticipated problems.

Actual outcomes should first be addressed in light of the earlier agenda of anticipated outcomes/consequences.

1. More systematice reading and writing activities in Content Areas.

While more reading and writing activities were done in the classes of committee members, it was not as "systematic" as originally envisioned. Given the latitude teachers were allowed, a great deal of trial and error occurred and, while some committee members were quite systematic and consistent, others were more "eclectic."

2.Consistent and positive interaction between Departments.

This was probably the single most successful aspect of the project. Both the mid-year and final reports from teachers emphatically proclaimed that having time to thoughtfully discuss strategies, activities and methods with members of other departments was an invigorating and positive experience.

3. Cognitive improvement in Reading/Writing Skills.

This was clearly the weakest point of the project and the one most in need of improvement next year. Because of the variety of methods employed and the manner in which they were implemented, it was almost impossible to gauge cognitive growth this year. While at least some of the teachers on the committee could "see" the development of the students, the failure to develop a systematic method to pre- and post-evaluate individual classes or students left us with little more than a "sense" that there was genuine cognitive growth. (See Recommendations for the proposed remedy to this for next year's Project)

4. Affective improvement in attitudes toward Reading and Writing by both teachers and students.

As noted in the project evaluator's report, and much like the comments in #2 above, this proved to be a very positive aspect of the program. By May, teachers were finally "getting a grip" on how they wanted to use reading and writing strategies and several had incorporated methods or activities into their regular planning. In the same way, the climate of many classrooms had shifted in such a way that students were not negative about, or surprised by, doing a reading or writing exercise in a content area classroom. The fact that almost all of this year's project committee have expressed an interest in continuing on in next year's group (despite questions about funding, remuneration, etc.) speaks to the commitment and enthusiasm with which this group finished the Project.

5. Dissemination of Reading and Writing Strategies, etc. by Committee Members.

Evidence points toward a successful first step toward this goal. Several members of the Winchester High School faculty who were not on this year's project committee have volunteered to be part of next year's group. During the year, the project director and several committee members were sought out by faculty to discuss or demonstrate or aid in developing reading/writing strategies in content areas. Finally, a full faculty meeting in May in which the staff was broken into inter-departmental groups, each with a project committee member as "table head", was received very positively by the faculty. Most importantly, the staff at Winchester High School seems to see the reading-and-writing-across-the-curriculum project as a worthwhile and important program and as one that is *here to stay*.

Overview on Outcomes and Consequences

While there was a lack of cognitive data which might herald momentous changes at the end of this first year, it is safe to say that the attitudinal and affective results of the reading/writing-across-the-curriculum project were striking, if not dramatic. As noted above, in both the project evaluator's reporter and in the project director's report based on committee teachers' evaluations, the effect of the project was wholly positive and seen by all as a very good "foot in the door" or "tip of the iceberg" year. After attending the National Council of Teachers of English convention in Louisville, Kentucky in late March (1987) it was the project director's observation that, while there are some very good reading and/or writing across-the-curriculum programs scattered around the country (Denver, St. Louis, Memphis), Winchester has the opportunity to be on the cutting-edge of a movement whose time has come. The Northeast region of the country has barely scratched the surface in this area, even though most research indicates across-the-curriculum skills teaching will surely be a cornerstone of public education in the coming decade. That the teachers involved, *the* crucial element in implementing such programs, have accepted the project with enthusiasm, augurs well for the district's future in this crucial area.

V. Recommendations

In looking toward the continuation of the reading-and-writing across-the-curriculum project during the 1987-1988 school year, the project director recommends the following:

1. The project teachers need to be more structured and keep stricter accounting of their students' work. Classes which participate in the project should keep individual student folders so that all the year's work may be reviewed and clearer cognitive data might be obtained. This would seem to be an essential facet for the second year of the project.

2. The project director should take a more active role in demonstrating lesson, strategies and activities with the project committee. Committee members might also wish to demonstrate a technique or method which has proven successful.

3. Several *specific* writing strategies should be employed by all project teachers during the course of the year. These would be:

a. Organizational writing: semantic or concept mapping, for example.

b. A variety of "audience-oriented" styles of writing --- that is, who is the student writing to/for? Examples of this would be learning logs or journals, unsent letters, biopoems, dialectic notes, etc.

c. Specialized writing: students should learn the idiom of a discipline: what is the vocabulary and style of a scientific paper? How does an historian present his findings? What is a mathematician's written explanation of his work like?

4. Several *specific* reading strategies should be employed during the year by all project committee members. These would include:

a. Assignments which are clearly organized by the teacher around pre-, during, and post- reading activities (see Chart A, following). The concept of tapping prior knowledge of students is an essential one for teachers to become familiar with and use on a regular basis with *all* reading assignments.

b. Organizational analysis of reading assignments (see Chart B, following) should become a regular part of project committee members' reading assignments. Students must learn to analyze the framework of a text in order to pursue an author's intent with greater focus and clarity. If we do not develop active readers we are probably not developing effective readers.

c. Students should be held accountable *on a regular basis* for "mapping" chapters (semantic, concept, idea mapping) or developing visual reading guides or pre-, during and post-reading questions in relation to their reading assignments. Teachers cannot simply "assign a chapter" and then summarize it the next day, during class, for students.

The focus of recommendations 3 and 4 are both clearly on developing active learners who can critically analyze what they are doing in class, no matter what the class is.

5. Finally, the administration---from the Superintendent to the Assistant Superintendent to the Building Principals and their Assistants---must assertively lead the district toward the goals of active learning and critical thinking which reading-and-writing-across-the-curriculum is aimed at. In a community which lacks a decent book store and has a public library which is doing a thriving business lending videotapes, it will take a well-focused, clear, multi-year strategy beyond simple public relations to insure that this program be effectively implemented. Coordination with other programs and resources in the district is essential and must be on-going. Financial support must be insured. Teachers must be led persuasively to see that *process*, in this case, may be far more important than the weight of mere content. Clearly, this is not an easy task, but affecting genuine change seldom is. Winchester has an opportunity to be on the cutting-edge of an important educational movement and it will take clear and steady vision, as well as persistent adherence to the belief in process and change, to move the district and its students into the 21st century with the assurance that we have, indeed, achieved excellence in education.

Wilbur J. Johnson, Jr.
Project Director

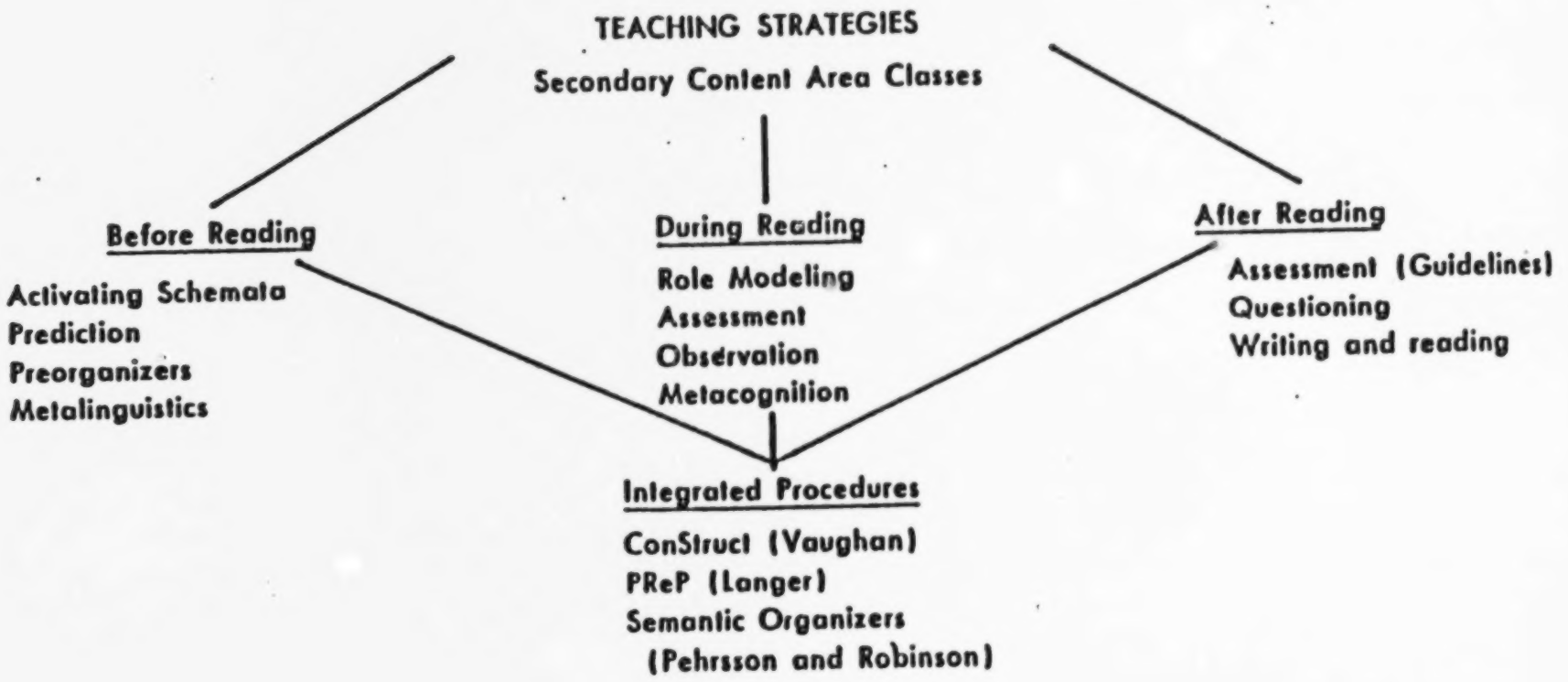
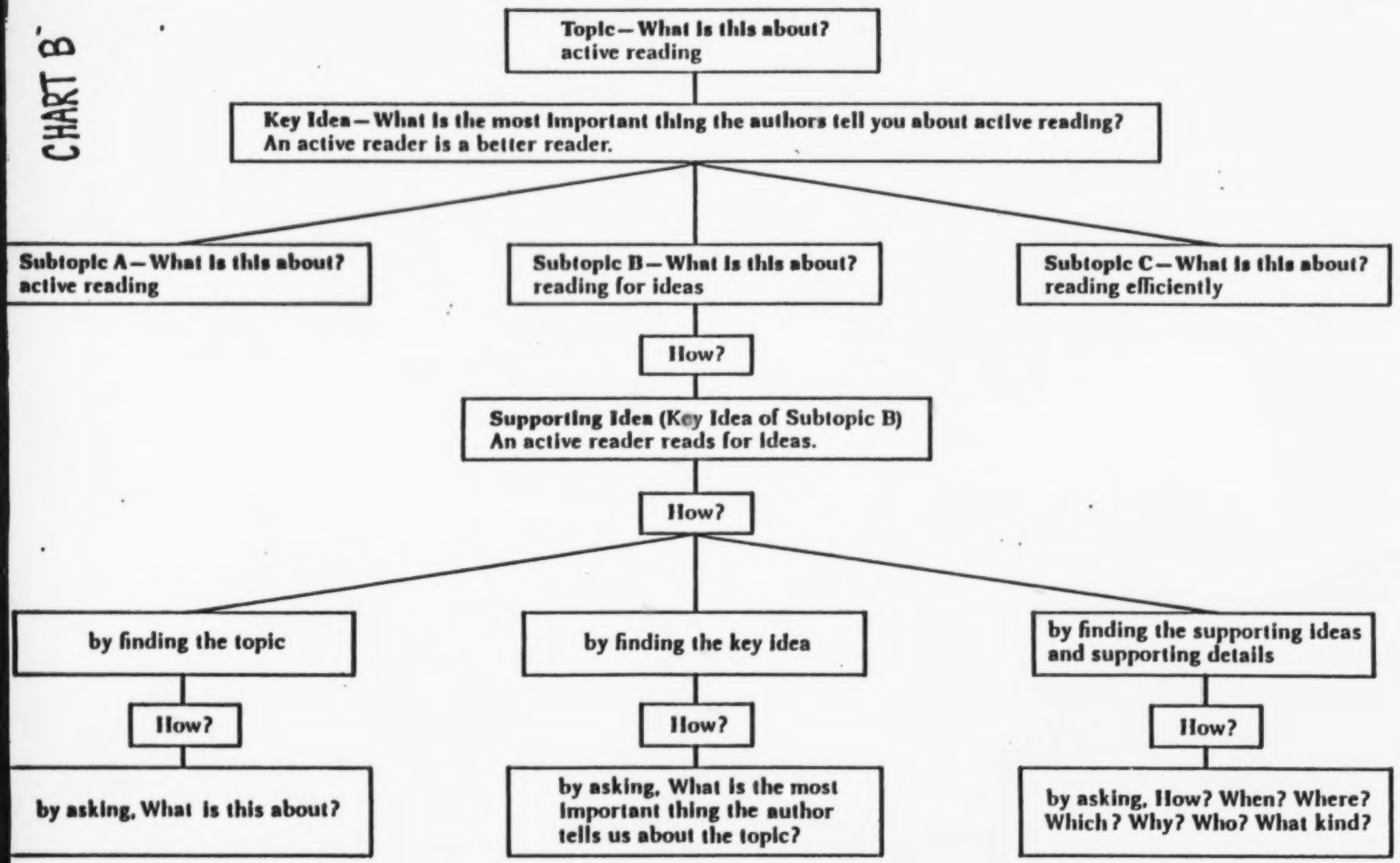

TEACHING STRATEGIES
Secondary Content Area Classes
Before Reading
Activating Schemata
Prediction
Preorganizers
Metalinguistics
During Reading
Role Modeling
Assessment
Observation
Metacognition
After Reading
Assessment (Guidelines)
Questioning
Writing and reading
Integrated Procedures
ConStruct (Vaughan)
PReP (Langer)
Semantic Organizers
(Pehrsson and Robinson)

CHART A

CHART B


Topic—What is this about?
active reading
Key Idea—What is the most important thing the authors tell you about active reading?
An active reader is a better reader.
Subtopic A—What is this about?
active reading
Subtopic B—What is this about?
reading for ideas
Subtopic C—What is this about?
reading efficiently
How?
Supporting Idea (Key Idea of Subtopic B)
An active reader reads for ideas.
How?
by finding the topic
by finding the key idea
by finding the supporting ideas and supporting details
How?
How?
How?
by asking, What is this about?
by asking, What is the most important thing the author tells us about the topic?
by asking, How? When? Where? Which? Why? Who? What kind?

REPLICATION

Replication of Winchester's reading-and-writing-across-the-curriculum program would require several important considerations on the part of any interested school district. The first would be a full-year of carefully planning the project. This would entail becoming familiar with the literature and research in the field and developing extremely clear objectives for the first year of teacher participation. Second, administrative and financial support must be clearly committed for *several* years. Third, project leaders should be included in planning and preparation from the earliest point possible and should be members of the faculty who have already shown a clear committment to reading and writing skills development in the content areas. Fourth, public relations should begin, with the faculty and community, the year *prior to* implementing the program --- large scale teacher and community education is necessary for support. Finally, the resources of the district --other programs or people who could serve as support services --- should be aligned before implementation. These would seem to be the easiest, yet most effective, steps any district might begin with to replicate a project like Winchester's.

Reading & Writing Across the Curriculum Source-Books Bibliography

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Roots in the Sawdust - Anne Ruggles Gere, Editor
NCTE Publications
1111 Kenyon Rd., Urbana, Illinois 61801

Active Reading - Shirley Quinn & Susan Irvings
Houghton Mifflin Co., Boston, MA

Teaching Reading in Secondary School Content Subject - Carl B. Smith, Sharon Smith & Larry Mikulecky
Richard C. Owen, Publishers
New York, NY

Learning Activities for Reading - Selma F. Herr
Wm. C. Brown Company Publishers
Dubuque, Iowa

Strategies in Teaching Reading: Secondary - R. Baird Shuman
NEA Publication
Washington, D.C.

Reading: Trends & Challenges - Roger Farr
NEA Publications
Washington, D.C.

Reading Instruction in the Middle School - Maryann Murphy Manning & Gary L. Manning
NEA Publications
Washington, D.C.

Reading in the Content Areas: Research for Teachers - Mary M. Dupuis, Ed.
International Reading Ass'n.
800 Parksdale Rd., Box 8139
Newark, Delaware 19714

Improving Reading in Every Class - Ellen Lamar Thomas & H. Alan Robinson
Allyn & Bacon, Inc.
Boston, MA

Reading Comprehension: New Directions for Classroom Practice - John D. McNeil
Scott, Foresman & Co.
Glenview, Illinois

Becoming Readers in a Complex Society - Alan C. Purvis & Olive Niles, eds.
NSSE Publication
The University of Chicago Press
Chicago, Illinois

To Compose: Teaching Writing in the High School - Thomas Newkirk, ed.
Heinemann Publishers
Portsmouth, NH

Teaching Reading Comprehension: Theory & Practice - Wm. D. Page & Gay Su Pinnell
NCTE Publications
1111 Kenyon Rd.
Urbana, Illinois 61801

Reading & Writing Source Books - page 2

Classroom Strategies for Secondary Reading - W. John Harker, ed.
International Reading Association
800 Barksdale Road, Box 8139
Newark, Delaware 19714

Write to Learn - Donald M. Murray
Holt, Rinehart & Winston
NY, Chicago, SF, Philadelphia

Learning to Write/Writing to Learn - John Mayher, Nancy Lester & Gordon Pradl
Boynton/Cook Publishers, Inc.
Upper Montclair, NJ 07043

Read to Write: A Writing Process Reader - Donald M. Murray
Holt, Rinehart & Winston
NY, Chicago, SF, Philadelphia

Language Across the Curriculum - Michael Harland, ed.
Heinemann Educational Books
London, England

The Reading Report Card
Writing: Trends Across the Decade, 1974-84 - NAEP Reports
ETS
Princeton, NJ

Sequence: A Basic Writing Course - Rory D. Stephens
Holt, Rinehart & Winston
NY, Chicago, SF, Philadelphia

A Writer Teaches Writing - Donald M. Murray
Houghton Mifflin Co.
Boston, MA

Basic Writing: Process & Product, Cases & Readings - Elizabeth Renfro
Holt, Rinehart & Winston
NY, Chicago, SF, Phil.

Teaching Them to Read - Dolores Durkin
Allyn & Bacon
Boston, MA

Teaching Reading & Study Strategies: The Content Areas - H. Alan Robinson
Allyn & Bacon
Boston, MA

The Semantic Organizer Approach to Writing & Reading Instruction
Robert S. Dehrsson & H. Alan Robinson
An Aspen Publication
Rockville, Maryland

APPENDIX A

PROJECT EVALUATION

REPORT OF OUTSIDE EVALUATION OF THE PROJECT ON READING AND WRITING ACROSS CURRICULUM WINCHESTER JUNIOR AND SENIOR HIGH SCHOOLS 1986-1987

This report is based on seven months of observation, interviews, and analysis with respect to the Reading and Writing Across Curriculum Project extending from late October, 1986, to the end of May 1987. The comments are based on periodic conferences with the Project Director and Director of Language Arts, ocurring about once a month, beginning interviews with ten high school and two junior high school teachers, end-of-year interviews with twelve teachers in the high school and five in the junior high (nine of the teachers met with the investigator both at the beginning and at the end). In addition, three classes of students were interviewed in April; questionnaire responses were received from 48 students; and sample papers collected by the project director and by individual teachers were examined. No attempt was made to test student growth in basic skills since what was involved in this project was less fixation on skill development than attention to concept development in various desciplines and the teaching of higher order thinking skills through writing.

General Observations and Overall Impression

Given the importance of generating an increased amount of writing in every subject area for the purpose of improving learning (young people only learn to think through the language of science or the language of history by writing science or writing history), the effort to strengthen reading and writing across the curriulum is commendable. Extensive evidence indicates that the young people in the project classes are writing far more than

students in schools nationally (when one paper every four weeks remains the norm). It seems probable that students at Winchester High School write more than in many schools in any event, particularly when enrolled in the Writing Laboratory (which students find highly valuable); but teachers engaged in the project feel they have students writing more not only in the experimental project classes, but in their other classes as well. These comments are echoed by students.

Students also find their writing tasks this year have been more varied, more complex, more mature. Teachers report identifying new strategies for supporting subject matter learning with writing, and in the junior high, strategies for teaching students to read subject matter.

The concern with reading as well as writing across the curriculum is characteristic of all of the junior high school teachers interviewed, but of only one high school teacher where the focus seems to have been almost exclusively on writing. Still, a number of the teaching strategies and model lessons discussed are as pertinent to teaching reading as writing.

The Nature and Quality of Writing

Comment by students and teachers, reinforced by papers sampled, indicate that many modes of writing are being stressed in the project, and that considerable attention particularly was directed to vocabulary development, to the organization of ideas, and to "idea mapping."

One important emphasis early in the year, reinforced by an outside consultant, was a stress on writing summaries. Recent research has carefully documented the importance of summaries (paraphrases, precis) requiring readers to reprocess ideas, to distinguish main ideas and details in

what is read, and hence are an important contributor to the comprehension of expository or informational prose. The regular use of summary writing in subject classes is extremely important and it has been neglected during recent years.

Also vividly recalled by students was an imaginative writing assignment — I believe it occurred in an art class - in which they were asked to interpret the meaning or meanings of a non-representational painting - an exercise which clearly tapped their basis feelings.

There were also reports, research tasks, logs and journals - the exact nature of these varying with teacher and subject.

One unexpected finding was the attention given to the writing of tests — designed both to helping students do better on "essay examinations" and to help teachers ask questions which will tap the cognitive potential of students in each subject class.

Providing experiences in writing various modes and genre is important. It could be made even more so were some clear guidelines developed to ensure that students are provided with instructional experience with the kinds of writing that teachers think is most important. The current International Assessment of Writing in Native Languages is beginning to offer some important help in this regard. It is important to provide instructional experiences with the most critical kinds of writing since, clearly, what is learned about communication with one mode of reading or writing does not transfer to another.

The Teachers

The teachers who participated in the project did so voluntarily; hence,

favorable attitudes could be expected. However, even those who seemed rather neutral in November were enthusiastic participants by May.

Reactions to the Project Leader in the High School were strongly positive. He was seen as supportive, thoughtful, well organized, and possessing a wealth of suggestions.

The Junior High School Leader was also warmly regarded by her colleagues. Even though this teacher did not call regular group discussions, she was "always available" for conferences with individuals.

The Winchester teachers participating in this project were uniformly alert, intelligent, imaginative, and thoughtful - probably typical of professionals employed in a strong suburban district, but certainly not typical, sorry to say, of teaching staff members in the large majority of American schools. Hence, it was a surprise to learn that these teachers rarely have an opportunity to meet with and discuss teaching ideas with their colleagues in other disciplines. To these intelligent teachers the collegial aspect of the high school project with the bi-weekly seminars had great appeal. Teachers with strong personal resources learn from one another - from mind meeting mind. Some teachers observed that the Writing Project provided the first opportunity they had had to learn what fellow teachers in other disciplines were doing.

The Students

To say that all the students interviewed were enthusiastic about writing would be a misnomer. For the most part they admitted they were writing more and writing better, but the interviews occurred mostly in non-academic classes with young people who did not respond easily to a stranger

posing questions about their school work. Still, questionnaire responses indicate a general belief that they had grown in writing.

Most students reported that in addition to engaging in more writing, they were receiving help from subject teachers in <u>how</u> to write - an important aspect of teaching students to think through writing. In addition, the Writing Laboratory experience has been so successful for some students that they feel they can go back to the Writing Laboratory teacher for assistance even in subsequent years. (Similar individualized help is also being provided for young people in Special Education.)

One aspect of the Winchester Program that is particularly successful is the provision for teacher - student conferences on writing. Donald Graves and Donald Murray of the University of New Hampshire have repeatedly emphasized that such conferences can provide the most valuable forum for instruction in writing, yet the recent National Assessment of Educational Progress revealed that only <u>three</u> percent of all 13-year-olds or 17-year-olds could even remember talking to a teacher about writing. At Winchester High School, more than 50% of the students interviewed reported such conference experiences -many within the previous two weeks. A sign of major strength.

But few students in any of the subject classes keep folders of their work and few teachers have thought about using such folders as one way of assessing pupil growth. (Some pupils have had English teachers who required them to maintain portfolios.) Keeping a file of papers written in social studies or in science could prove illuminating to teachers and students as they reviewed a year's work after several years.

Recommendation:

1. That the Reading and Writing Across the Curriculum Project be continued at Winchester High School and, if possible, be expanded to include two or three teachers from every subject area so that specialized teachers have an opportunity to meet together to discuss subject area application.
2. That regular group meetings be initiated at the junior high school - in addition to the very successful conferences so that teachers there can also learn from interacting with one another.
3. That consideration be given to instituting more interdisciplinary seminars as a major aspect of future staff development programs in the Winchester Schools. Most advanced learning occurs through interactive, not presentational modes. (Seminars are characteristic of training programs for business leaders as they are for university graduate students. With a staff as competent as that in Winchester, more reliance should be placed on staff interaction.
4. That some emphasis in next year's seminars be placed on the purposes of writing and how one learns through writing, and that both students and teachers be encouraged to articulate the purposes of each instructional experience and what they are learning from it. Cognitive psychologists call this "metacognition," learning about learning, and recent studies demonstrate that clarifying the purposes of instruction can significantly enhance learning. In too many instances this year, students, and sometimes teachers, were engaged in writing activity without really understanding its purpose.
5. That the value of maintaining writing portfolios in every subject area

be discussed early in the next school year and, in any case, the design for evaluation consist of identifying a selected number of students in all subjects who would be asked to maintain writing portfolios which could then be assessed at year-end.

6. That if the High School Project is to include Reading as well as Writing, an early effort be made to identify critical features to be addressed which have implications for both reading and writing, such as accessing prior knowledge before reading and studying the structures of various kinds of expository texts.

James R. Squire

APPENDIX B

MID-YEAR REPORT

EXCELLENCE IN EDUCATION:Reading & Writing Across the Curriculum
Mid-Year Report

THE PROCESS

The ten members of the committee (including the Project Director) met in a series of formal and informal settings throughout the first semester. Formal Group meetings began on September 24, 1986 and have continued on a regular once-a-month basis since. The Committee has also participated in one 1/2 day In-Service Workshop in November and attended an InService Workshop featuring Dr. Dolores Durkin. Individual Committee members have met formally with the Project Director twice in the first semester and once with the Project Evaluator, Dr. James Squire. Beyond that, Committee members have frequently visited the Project Office, according to their needs.

The focus of formal meetings, as well as informal discussions, has been on the development and implementation of reading and writing materials for Content Area use. The Project Director, with the aid of the Director of English and the Assistant Superintendent of Curriculum, has disseminated numerous materials to teachers throughout the semester.

Starting in September the Committee began to systematically examine Content Area texts in relation to literature studied, with an eye toward developing strategies to develop more effective readers. Teachers began to develop writing strategies for their classes.

By October the Committee began to examine their use of two concepts which seemed crucial in implementing effective reading/writing skills: activation of prior knowledge and "composing" vs. writing. Specific strategies discussed and implemented included summary writing, semantic mapping, clearly defining writing/reading objectives and vocabulary exercises.

Our November In-Service Workshop served as a clearinghouse for ideas and methods which had been employed to that point, with an eye toward the remainder of the semester. The Committee used the Workshop quite effectively and, beyond the exchange of ideas, it proved to be an excellent "catch-up" period in which we could all discuss the literature/materials used to that point and examine new sources. The Workshop seemed to invigorate the Committee and they headed toward the Christmas period with renewed energy.

By December several teachers had already compiled an impressive folder of materials and continued to seek new methods/strategies for the remainder of the semester. (See "Results")

The Holidays and Mid-Year examinations proved a hectic period for everyone and January was a slack month for the Committee, compared to all they had done from late-September through New Year's. Nonetheless, our January monthly meeting, at which we viewed a videotape on reading/writing strategies, was very constructive and reinforced the focus and commitment of the group.

In specific terms, some of the strategies which were employed (and, in some cases, became commonplace) were: learning logs, journals, semantic mapping, biopoems, concept magnets, the three-level study guide, unsent letters, dialectic notes and others.

Throughout the first semester the Committee exhibited a highly energetic pursuit of their goals. Many members not only read as much as they could in relation to the process but also contributed articles for dissemination. This interchange of ideas ACROSS DISCIPLINES has become one of the most positive aspects of the project and an integral part of the functioning of the group.

Attached Addenda A compiles some of the materials disseminated and examined during the first semester.

RESULTS

As one would expect, results have varied with individuals involved in the project. Overall, however, this was a very productive semester and a good start for the project. Teachers have employed a vareity of strategies after examining an enormous amount of materials, particularly considering their course load, duties, etc. Equally important to the project has been the growing awareness on the part of the entire staff to the importance of Reading/Writing Across the Curriculum. The mere existence of the Committee has heightened consciousness on the subject and the fact that we have representation from a variety of departments has aided in this. A related, significant result has been the interaction between Committee members from the different disciplines. Rather than simply give a cursory review of the results, quotes from Committee Member's mid-year self/project evaluation speak to the issue better.

"Becoming acquainted with the different techniques (and) the interaction between members of the group (has been the most positive aspect of the project)."

"I have received a great deal from the group as far as exchange of ideas and approaches concerned to develop reading and writing."

"(The) most positive aspect (of the project has been) the opportunity to listen to and comment upon the ideas and experimentations of others."

"The totality of the experience has tended to focus and reinforce my conviction about the necessity of writing as a tool for learning and thinking."

"When students can write . . . about their . . . work they are able to clarify the procedures and processes by which they arrived at a solution to the problem."

"The whole concept of teachers working out ideas together in a group is a very positive one."

"It has permitted me to formalize my teaching strategies."

"Discovery by students that they <u>can</u> write (if they can speak) is wonderful to observe."

"What is truly exciting to me regarding this very worthwhile project are the teachers' reactions."
As mentioned above, what has become commonplace for the Committee is for members (other than the Director) to contribute materials they find which apply to the project.

Beyond the positive effect the project has had on teachers, regarding their interaction and exchange of ideas, there has been substantial work done IN CLASSROOMS. Addenda B documents both materials contributed for dissemination as well as actual classroom exercises which have been used this semester by Committee members.

One last note: the positive effect of acquiring the services of Dr. James Squire as our project evaluator has been clearly noticeable on the Committee. Jim's knowledge of the field and his easy manner with the teachers has proven another positive impetus. He has sent applicable materials to Committee members and the Director during the semester and his enthusiastic reinforcement of the Project, and the individuals involved, has been a great help.

CONCLUSIONS

Even if the project had only been designated to run for one semester I think we could feel very good about what has been accomplished. There is an obvious enthusiasm generated by many committee members and this has spread to other people on the staff. The heightened administrative awareness of the importance of reading/writing skills and its necessity in the day-to-day curriculum has also been a positive aspect. In all, I think we have secured a very important "foot in the door" for reading and writing across the curriculum. There are, clearly, people "ready" for this type of infusion in their teaching methodology. The teachers on the Committee have reinforced my belief in the creativity and boundless energy of the classroom teacher. Most importantly, reading and writing activities in non-English classrooms has begun on a regular, systematic basis in Committee member classes.

On the other hand, we have to realistically look at the enormous distance which must still be covered to integrate reading and writing into ALL classrooms. What has been clear to me is that teachers have to be educated about the concepts behind reading and writing in their classes. It must be clear that we are NOT asking them to do MORE in their classes or, for that matter, anything NEW in terms of content covered. The Committee, after all, is a self-selective group: people predisposed to the project and its concepts. It remains to be seen how well we can effectively and positively LEAD the rest of the faculty to conclude they WANT to incorporate reading/writing skills as an integral part of their daily curriculum.

RECOMMENDATIONS

The most obvious recommendation is that the Project, in some form, should continue --- not only next year but into the early 1990's, at the very least. There is so much to do, in terms of teacher education, dissemination of materials, development of appropriate curriculum materials, etc. that the District must make a major time and money commitment if it truly believes in Reading and Writing as a major goal for this system. Along those lines, it is clear the District must define and articulate a philosophy which makes a clear commitment to producing ACTIVE LEARNERS and CRITICAL THINKERS. At present, there is no statement to this effect anywhere in Winchester and is at the core of resistance to programs such as this. Reading and Writing are process skills which develop higher level intellectual activities. If we remain preoccupied with simple test scores and thinking of students as quantifible according to their numbers --- and if the staff is SHOWN this, implicitly or otherwise --- reading and writing, as a truly integral part of our curriculum, is doomed.

In the February, 1987 issue of Language Arts Professor Henry Giroux discusses Donald Graves's work and sums up what I think is at the heart of our own project.

> Whereas mainstream curriculum theory appeals to accountability schemes and sterile, ever-growing forms of quantification to legitimate a particular view of learning, Graves raises questions about how learning can provide the grounds for students to be critical and self-determined thinkers. Whereas mainstream curriculum theory frequently ignores the issue of student experience by arguing for classroom methods that can be generalized across student populations, Professor Graves argues that student experience is a central aspect of teaching and learning and has to be dealt with in its particular context and specificity. In mainstream curriculum theory, teachers are increasingly reduced to the status of clerks carrying out the mandates of the state or merely implementing the management schemes of adminstrators who have graduated from schools of education that have supplied them with the newest schemes for testing and measuring knowledge, but rarely with any sense of understading how school knowledge is produced, where it comes from, whose interest it serves, or how it might function to privilege some groups over others.

In much the same way, we CANNOT simply,administratively mandate a reading/writing component to our Content Areas and think we have accomplished our goal. As with reading and writing skills themselves, the implemenation of an effective program such as ours is a PROCESS which must be thoughtfully and carefully implemented.

Teachers must not only be offered reading and writing strategies but must be familiarized with diagnostic strategies so they can know which students/classes need what methods, as well as for post-reading/writing analysis of student work.

For next year, I think the Committee would be served well if each member (if we have several from different departments --- or, ideally, ONE from EVERY department) was given one less classroom period in lieu of a monetary stipend. That free period would enable teachers to concentrate on reading/writing skills methods, strategies, literature, etc.. If several, if not all, had a COMMON free period, it would allow for the kind of interaction which has proven most effective among this year's group.

Beyond that, the program must be nurtured and begin in lower level grades, so that students come to think of reading and writing as natural in ANY classroom and not simply "something you do in English class."

APPENDIX C

WRITING SAMPLES FROM

ACROSS-THE-CURRICULUM

Egypt and the Pyramids - Pharoahs - Mummy's

ite a summary of: "How did the Egyptians Preserve Mummies?

A mummy is a dead body that has been preserved. The Egyptians wanted to preserve their dead because they believed that there is another life after you die, and you would need your body in this other life. They also thought that the soul of the body would have to notice it if they preserved the body. They used to bury their dead in the dry desert, until pyramids were invented. The way Egyptians mummified body used. First they remove all the organs (except the heart and kidneys) and put them in "canopic jars. Then they rehydrated the body by pouring

salt on it. Then they bathed the body and covered it with carnivorous resin and wraped linen around the body.

Would you like to be preserved as a mummy?

No, I would not like to be preserved as a mummy. The reasons are, I don't want to have my organs removed when I died. I also think it would be rude to have salt poured all over my body to dehydrate it, and then have tree sap smeared on me. I'd rather just have an injection of fluid so my body wouldn't rot so fast.

Consecutive Number Equations

A consecutive number equation is a formula that allows one to find a set of equally different increases or decreasing values by knowing what their sum is and how different the numbers are for example:

Give 3 consecutive intecegers whose sum is 24

$x + x+1 + x+2 = 24$

$3x = 21$

$x = 7 \quad x+1 = 8 \quad x+2 = 9$

Signif: When Used as a tool in testing how to break up this type of word problem, it may form a good foundation in solving more advanced word problems.

Real Life

"Hey Bobby!! Come here! Mom told me to find out what 3 consecutive integers have a sum of 96 or She won't give me my allowance! How can I figure it out?"

"Well mike that easy, just use a Consecutive No. Equation there, I'll show you. Take X,

then take $x+1$, and $x+2$ and mush them all together. You see, x is a number, $x+1$ and $x+2$ are the numbers that come after it. So do this

$x + x+1 + x+2 = 96$ then find x:

$3x + 3 = 96$

$3x = 93$

$x = 31$

Easy Huh?"

"Yeah Bobby, now I can get my allowance and go to the movies. You're a great big brother!"

Liz York
Science
Biopoem

Photosynthesis

Produces the gas needed for life
Helps the atmosphere
Oxegyn is the end product
Takes light and puts it to use
One plant is not enough though
Sun is the source of energy
You need plants to stay alive
Needs chlorophyll to use the light
Takes in carbon dioxide and gives off oxegyn
Heterotrophs are dependant on plants
Every plant uses the process
Starch is the main product
It makes glucose
So everyone should be thankful to plants

T. Jenner Art

ASSIGNMENT #2 LISTS

MAKE A LIST EXPLAINING THE PROCEDURE FOR PLANNING A LOGO DESIGN

ANSWER IN COMPLETE SENTENCES

excellent.

What is a logo?
List the step by step procedure that you used to get to a final design.
Explain rough sketching.
Write about the tools and materials used.
Mention the "comprehensive drawing"
Explain the final presentation of the design.

A logo is a simplified, clever design used to represent A company or product. It is designed so that wherever the public sees it, they think of the company or product. In order to reach a final design, you would first just draw A picture having to do with the thing you are representing. Then from that picture you would take the main shapes and Ideas, simplify them, and arrange them, without loosing effect.

I use rough sketching to try new ideas and to help in re-arranging shapes, and to help in simplifying.

For logos, you need many tools and materials.
Since they usually need to be perfect, A compass is nessesary for drawing circles. A ruler is nessesary for straight lines, and measuring lines that are supposed to be equal in length.
A protractor would be useful for measuring angles.

When transfering the ~~design~~ design, you may need tracing paper or something similar. For rough sketches and experimentation, ~~[illegible]~~ you need a pencil and paper. For the final drawing you need good blank ink [illegible]

Business Ed

Nicole Burbois

THE SECRETARIAL PROFESSION

The secretarial profession's history started toward the end of the nineteenth century, with the invention of the typewriter and the Gregg Shorthand system, many women became proficient in secretarial work and began to take over duties formely performed by men. Secretaries were originally called "type-writers," who wanted to trade a life on the farm or in the factory for a different life in the business world. The historical impact of these women was revolutionary.

Today there are several million secretaries in the United States. Though the majority are women, there are many men who are still out there wanting this as their profession. Secretaries' titles range from junior stenographer to administrative assistant. Secretaries may work in many different kinds of places, but their function is basically the same-keeping business running smoothly through the application of their secretarial skills and abilities.

Today there is a tremendous demand for good secretaries, and authoritative sources indicate that this demand will continue to grow.

German

10/16/86

Ich muss heute Stage Crew machen. hoffentlich kommen einige von meine Freunde auch es ist sehr lang weg ohne sie weil ich kenne die andere leute nicht sehr gut. Meine Freunde sind nicht sehr Krausen(?) (Grausam) aber sie sind immer noch meine Freunde.

Schön daßes dieses Jahr besser geht! die Schule wäre nicht so schlimm wenn man auch so viel Arbeit hätte, nicht? Ich verstehe genau wie das ist, wenn du doch nicht genügen kannst die Arbeit zu machen. Es passiert mir auch genau so manchmal!

38

10/26/86

Da bin ich wieder! Heute fühle ich mich schon besser aber nicht so ganz gut. Ich huste noch. Heute bin ich hierher ein bischen gegangen mit meine Mutter. Sie hat mir neue schuhe und eine neues Hemdt gekauft. Ich habe die neue Sachen gern. Ich habe alle neue Sachen gern die mir gehören. Sie geben mir ein gutes gefühl, und ich brauche alle gutes gefühle das ich kriegen kann. Neue Sachen sind immer schön - fast so gut für mich wie die alten beliebten Sachen

39

German
p.2

Lieber Herr Doktor Muller!

Ich habe ein grosses Problem in meinem leben. Vor einer Woche habe ich mir die Haare schneiden lassen. Jetzt, natürlich muss ich sie noch ein mal schneiden lasse aber meine Mutter gibt mir die 50 dollar die ich brauche nicht. Wenn ich sie nicht schneiden lasse, dann kann ich nicht aus dem Haus gene, und ich muss gessenen werden. Was soll ich machen? Soll ich eine Bank berauben, oder soll ich meine Mutter toten? Ich brauche Hilfe!

Hilfe.

Lieber Herr Doktor Müller,

Wir haben ein sehr schones neues Apartement. Es ist wunderbar. Wir sind in einem guten Platz (in der Nähe von der Stadt) und es ist nicht zu teuer. Unser Problem ist die Nachbaren. An jeder Seite sind sie ärgerlich. Ein Nachbar hat einen sehr großen Hund. Er bellt die ganze Nacht durch. Ein anderer Nachbar hat Partys sehr gern. Fest jeden Abend hat er eine Party, und sie sind so laut! Eine Nachbarin gent überall ohne Kleidung. Sie sieht auf meinen Mann sehr oft, und es macht mich nervös. Die Nachbaren über uns haben einen undichten Wasserhahn. Wir hören es die ganze Nacht. Wir wissen nicht, ob wir mit ihnen sprechen sollen. Wie sollen wir es machen? Außer der Nachbaren sind wir sehr froh! Danke. Wir sind

Nachbar-verrückt!

Lena Mowjo
per 4.
√+ Science
Expository

Volume can be a disadvantage because it is not as precise as mass is. You cannot measure a substance after it has been changed or broken down, and result with the same answer that was before calculated.

When measuring liquids, volume is usually not the most accurate way of measurment, because it also measures airspace that is not seen in the liquid. It is also not accurate when measuring liquid because it does not measure condensation.

Mass is a very precise way of measuring. When we measured a substance after it had been changed we discovered that the mass always remained the same. That is an advantage because it makes the world concrete.

K Jenna.

Art

11 Logo

A Logo is a simplified design used to represent a company or product. Logos sometimes use many geometric shapes to help simplify them further, and make them easier to recognize and recall. Logos are designed so that whenever the public see them, they are reminded of the company or product the logo represents. In order to reach a final design, you would first just draw a picture having to do with the thing you are representing. Then from that picture you would take the main shapes and ideas, simplify them, and arrange them, without looking effect.

I use rough sketching to try new ideas and to help in re-arranging shapes, and to help in simplifying.

For logos, you need many tools and materials.

Since they need to be perfect, a compass is necessary for drawing circles. A ruler is necessary for straight lines, and measuring lines which are supposed to be equal in length. A protractor would be useful also for measuring angles. →

APPENDIX D

SAMPLE MATERIALS

DISTRIBUTED TO TEACHERS

Glossary

Anne Ruggles Gere
University of Washington, Seattle

As might be expected of teachers who worked together for several years, project participants developed a common language. In particular, the group settled on terms to describe various strategies for writing to learn. The following section defines terms, explains the value of the writing that results, and, where possible, credits sources. For a more complete explanation and for examples of variation in implementation, turn to chapters by authors named at the end of each listing.

Admit slips are brief written responses (which fit on a half sheet of paper) often collected as tickets of "admission" to class. These are collected and read aloud by the teacher with no indication of the authorship of individual statements. Admit slips are frequently used in community building. Exit slips are a variation.
See Forsman, Juell, Pearse, Schmidt, Yoshida.

Biopoem follows this pattern:
Line 1. First name
Line 2. Four traits that describe character
Line 3. Relative ("brother," "sister," "daughter," etc.) of _____
Line 4. Lover of _____(list three things or people)
Line 5. Who feels _____(three items)
Line 6. Who needs _____(three items)
Line 7. Who fears _____(three items)
Line 8. Who gives _____(three items)
Line 9. Who would like to see _____(three items)
Line 10. Resident of _____
Line 11. Last name
Biopoems enable students to synthesize learning because they must select precise language to fit into this form.
See Johnston, Juell, Pearse, Watson, West, Yoshida.

Completions ask writers to supply endings to sentence fragments. Writing completions pushes students to focus their thinking.

See Beaman, Juell.

Creative definitions resembles the parlor game Dictionary in asking writers to invent definitions for words. This process of inventing stretches the imagination.

See Juell.

Dialectics draw on a strategy described by Ann Berthoff in *Forming, Thinking, Writing*. Writers divide a page in half and on the left side record notes from reading and on the right side list comments or questions about the material read. This written interchange leads to the development of new ideas about a subject.

See Arkle, West, Yoshida.

Dialogues are a form of role playing in which the writer creates an exchange between two characters being studied.

See Beaman, Forsman, Juell, Pearse, Peterson, Watson, Yoshida, Zimmerman.

Dictation asks writers to copy exactly the words that are read aloud to them. The usual procedure is to read the whole selection through once and then repeat in sections. Dictation helps students absorb new material, and at the same time makes them conscious of how language works.

See Beaman, Peterson, Yoshida.

Dramatic scenarios present writers with situations of conflict drawn from subject matter and ask them to respond. By asking students to project themselves into the material, dramatic scenarios increase involvement with what is being studied.

See Beaman, Forsman.

Exit slips are usually distributed at the end of class and provide closure for learning by asking students to summarize what has occurred during the preceding class. These slips provide closure for students and, if collected by teachers, indicate what students know and need to know.

See Juell, Yoshida.

First thoughts were identified by Peter Elbow in *Writing with Power*. Their immediate written impressions frequently become the basis for further writing. First thoughts provide students a benchmark with which to measure their own learning.

See Arkle, Juell, Marik, Pearse, Peterson.

Focused writing invites writers to concentrate on a single topic during nonstop writing of specified duration. Like brainstorming, focused writing enables students to see how much they have to say on a given subject.

See Beaman, Forsman, Juell, Marik, Pearse, Watson, Yoshida, Zimmerman.

Free writing emphasizes fluency by asking writers to write continously for a specified period of time. The fluency induced by free writing makes other forms of writing to learn possible.

See Juell, Zimmerman.

Guided imagery is described in Tristine Rainer's *The New Diary.* It combines relaxation techniques with oral narrative to provide writers with an imaginative experience which becomes the basis for writing. Like role playing and dramatic scenarios, guided imagery asks students to become directly involved in what they study, gives them direct instruction in how to proceed.

See Juell, Watson.

Instant versions are suggested by Peter Elbow in *Writing with Power.* They ask writers to pretend that they are actually composing a final draft long before they are ready to actually complete such a task. The instant version helps writers focus and clarify ideas. Like first thoughts, instant versions give writers a benchmark for measuring their own progress, and they also push writers to generate a great deal of material quickly.

See Arkle.

Journals are, as Roethke says, greenhouses in which ideas grow. Journals provide a place to keep many of the writings described in this list and are central to writing to learn. Without journals, writing to learn loses its effectiveness because students have no way to preserve evidence of their learning.

See Arkle, Beaman, Forsman, Juell, Johnston, Marik, Pearse, Peterson, Watson, Yoshida.

The following are ideas to get students writing in their journals:

List the smells you like.

List the famous people you would invite to a party you were giving.

Write a letter to somepne in class you don't know very well explaining why you would like to know him or her.

WRITING ACROSS THE CURRICULUM

Part 1:

1. What kinds of writing are actually required in your subject matter course?

2. What kinds of writing would you the subject writer teacher like to assign if students wrote better?

Part 11:

3. What are the characteristics of good writing in your subject matter area?

4. Which of the writing forms practiced by professionals-scholars are appropriate for students?

5. What are the characteristics of popular writing in your subject matter discipline?

6. How do these differ from formal or scholarly writing?

Part 111:

7. How do you as a subject matter teacher go about writing?

8. What does your experience in writing have to contribute to your understanding of how young people write?

J. BUKOWSKI

ssessment Supplement for Teachers

This supplement to CAPTRENDS is designed for easy reproduction and distribution to teachers. PLEASE SHARE IT!

hinking Skills: leasuring More Than Recall

ıen you write test items, do you : students to do more than just re- l facts? Increasingly, educators d the public agree that we want :dents to do far more than regurgi- e knowledge; we want them to : their knowledge productively. So : a little discouraging to learn that a recent study of over 300 teacher- veloped paper and pencil tests onducted within the Cleveland iblic Schools), 90% of the test items easured recall.

Admittedly, getting beyond recall ın be tough. How do we define igher level thinking skills and how ɔ we pose questions or write test ems to measure those skills once efined? Here are some simple sug- estions that can make it easier.

One popular way to categorize igher order thinking skills involves ix levels.* After presenting students ith new information, we can assess eir ability to deal with that infor- ation in various ways:

First, we can ask if students can recall the information presented.

Second, we can ask if they comprehended or *understood the information.* If they can recount it in their own words, they probably understood it.

Third, we might ask if students can apply the information to a new problem situation. If they solve the problem successfully, they can use the information at their disposal.

Fourth, we can ask them to *analyze* or examine components of the information.

Fifth, students might be asked to combine, *synthesize* or assemble the information from two or more sources to draw a conclusion.

And finally, we might have students make some *evaluative judgment* about the information, expressing their opinions.

There are two possible ways to measure students' skill at each level: Teachers can make questions up, or they can rely on questions provided in instructional materials. Let's explore the second option first.

Analyzing Textbook Assessments

Do the textbooks you use include questions that take students beyond recall? What percentage of the questions posed represent each of the levels specified above? The only way to find out is to analyze the study questions posed in the text. Pick a random sample of three or four chapters of a social studies book, for example, and analyze the study questions. Here's an easy way to find the classification of any particular question:

If you can identify:	The question is testing:	Example
What students must *remember*	Recall	What is the electoral college?
What students must *restate* in other words	Comprehension	How does the electoral college work?
What information is to be *used* to solve the problem	Application	Predict what would happen if the electoral college were eliminated.
What is *broken down* into what parts	Analysis	Differentiate the various roles of the electoral college.
What two pieces of information are to be *combined*	Synthesis	How can the electoral college and the popular vote produce different results?
What students are to express an *opinion* about	Evaluation	In your opinion, should the electoral college be retained or abolished? Defend your choice.

o avoid confusion about the level
ny question, remember that lev-
from application upward to
lysis and beyond require recall
comprehension as a prerequi-
. That is, if the students cannot
all the information and/or do not
derstand it, she or he will not be
e to use it, analyze it, synthesize it
make a considered evaluative
gment. However, remember to
derstand that each of these higher
els requires some operation be-
ad just recalling or under-
nding.

In addition, remember that a key
fair assessment is to be sure that a
od match exists between the levels
questioning used for instruction
e., in the text or during recitation)
d for testing. For example, it
ould be grossly unfair to ask stu-
nts merely to recall information
ring everyday instruction, then
esent them with a test demanding
ills in synthesis and evaluation.
e must teach what we test. This
ds us to the issue of writing your
n test items.

eacher-Developed Questions

The questions that guide day-to-
ay recitation in class and that ap-
ear on teacher-developed tests and
uizzes determine how students will
erceive a teacher's expectations. If
hose questions tap higher order
kills, they will give the message that
he teacher values more than recall.

But writing such questions from
cratch is far more difficult than rec-
ognizing them when they occur in a
textbook. Right? Not necessarily.
Questions that measure thinking
skills are relatively easy to write, if
we attend to one key part of the
question: The verb or action word
that describes the problem to the
student. Try this simple plan:

If you want to measure:	Start the exercise with these key words:		Examples
Information recall	list describe define label repeat name	fill in identify what when who when	List the parts of speech.
Comprehension	paraphrase explain review match discuss	translate interpret how why	Explain what purpose the verb serves in a sentence.
Application	apply construct draw simulate sketch	employ restructure predict how	Write a sentence that includes a noun, a verb and direct object.
Analysis	classify dissect distinguish differentiate compare	contrast categorize separate breakdown subdivide	Break down this sentence into its components by diagramming it.
Synthesis	combine relate put together	integrate assemble collect	Combine what you know about good sentences and good paragraphs to write an essay on...
Evaluation	judge argue assess appraise decide defend	rate debate evaluate choose should	Evaluate this paragraph. Is it good? Why or why not?

In Summary

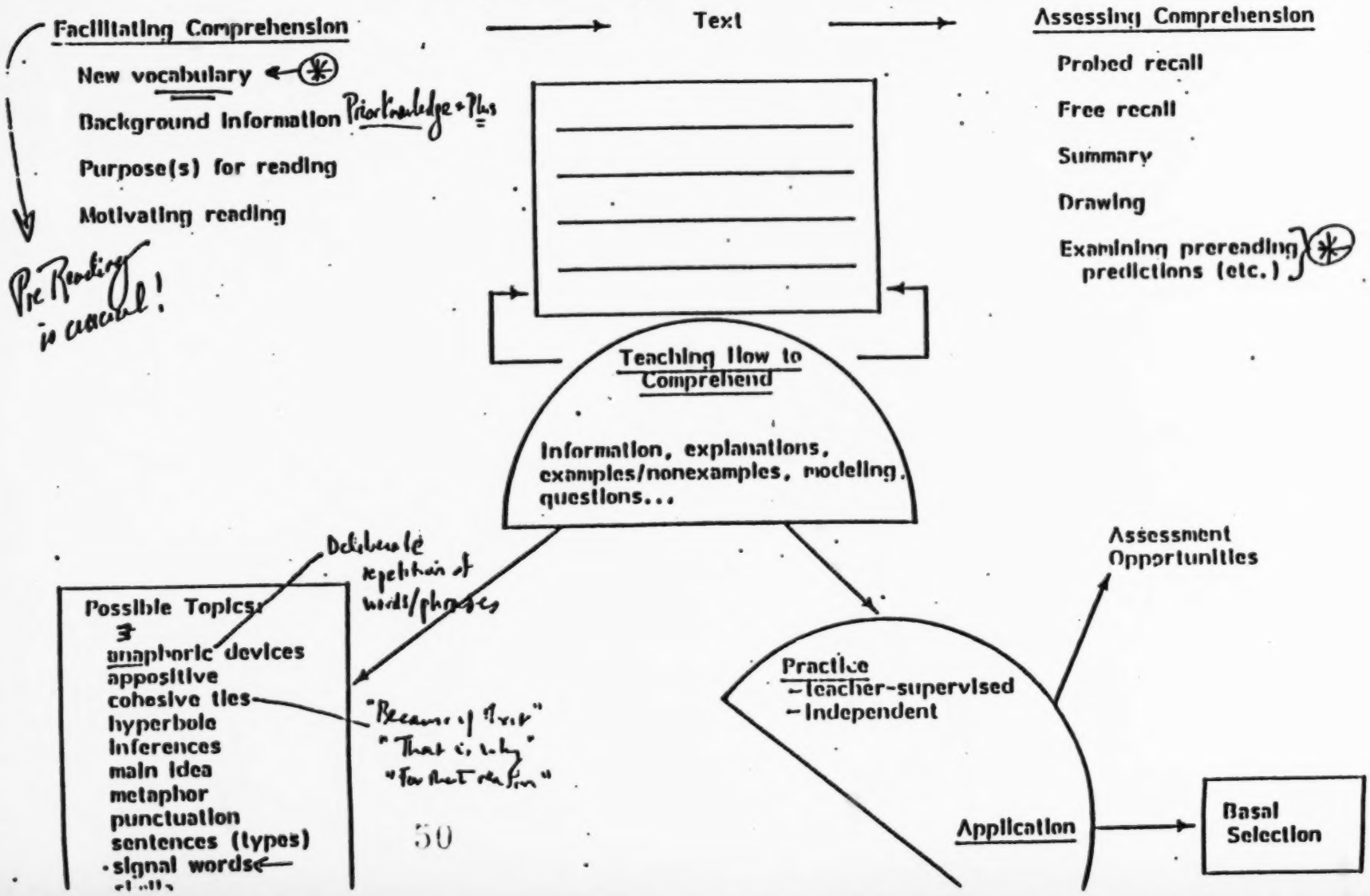
If you analyze tests you have developed in the past, you will gain some insight into your question writing tendencies. What level of skills are you measuring? What level do you wish to measure? Try changing the key words in some of the recall questions and watch the level change. But remember, it's not fair (or valid) to teach at the recall level and test at higher levels — or vice versa. Levels of instruction and assessment must match.

*Bloom, B.S. and others (eds.) *Taxonomy of Educational Objectives: Cognitive Domain.* New York: David McKay Co. Inc., 1956.

D. Durkin

COMPREHENSION

In the Context of a Basal Reader Lesson



Using Graphic Organizers in Social Studies

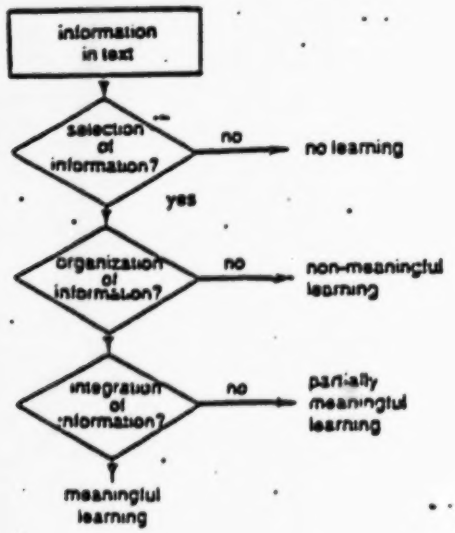
Bonnie B. Armbruster

The term *graphic organizer* refers to a visual display
: shows how information is organized. Tables and
v charts are common examples of such displays.
e purpose of this paper is to discuss how graphic
anizers can be used to foster meaningful learning
ocial studies.

at is meaningful learning?

he figure below (adapted from Mayer, 1984) is a
phic organizer. It is a simplified representation of
cognitive processes involved in meaningful learn-
from text. The figure illustrates the three main
ges of meaningful learning.

- First, readers must pay attention to the relevant
ormation in the text and *select* it for further cogni-
e processing.
- Next, readers must build connections among the
as in the text, that is, *organize* the selected infor-
tion into a coherent structure.
- Finally, readers must *integrate* the new informa-
n, or connect it with what they already know.



As the figure shows, the process can break down at any point. And it often *does* break down when students are trying to learn from reading their social studies textbooks. Even when students can decode the words in their textbooks, however, they often fail to read meaningfully. The result — they do not learn from what they have read. They may come away with a few tidbits of knowledge, but without meaningful learning. Students will not see how the parts fit together to make up the "big picture" of social studies.

Graphic organizers are tools that teachers can use to help encourage meaningful learning. They can help students attend to and select appropriate information for further processing, organize it into a coherent structure, and integrate it with prior knowledge. This paper will focus on *how* to use graphic organizers to accomplish these goals.

First, however, you need to know something about the kinds of graphic organizers that can be used in social studies. Obviously there are different kinds for the different ways of organizing information in social studies. The next section will discuss the common organizational patterns in social studies and their corresponding graphic representations.

What are the common organizational patterns and their graphic representations?

Information in social studies textbooks is often organized in three ways: as descriptions, as comparisons and contrasts, and as explanations.

Descriptive Pattern. Description is a broad category. Descriptions can consist of definitions and examples of a concept, or the attributes or characteristics of a concept or topic. Examples of descriptions in social studies include descriptions of individuals (Martin Luther King, Jr.), groups (Muslims), places (deserts), and concepts (civil rights).

Comparative/Contrastive Pattern. A comparison/contrast shows the similarities and/or differences between the attributes or characteristics of two or more topics or concepts. For example, comparisons

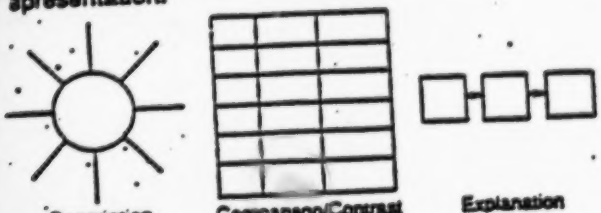
·en when students can decode the words in their textbooks, however, they ten fail to read them meaningfully. The result — they do not learn from hat they have read.

d contrasts in social studies may show the similari- s and differences between Athens and Sparta or cism and communism.

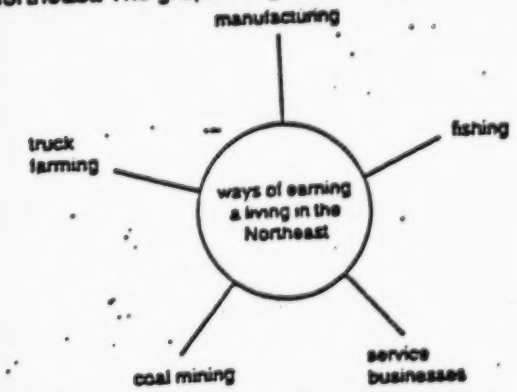
Explanatory Pattern. An explanation tells how or y an outcome or action occurred or happened. amples of explanations in social studies may treat y and how the Panama Canal was built, or how cli- ate affects population patterns.

These three common ways of organizing informa- on in social studies can be represented graphically. he exact form that the graphic organizer takes is not ·itical. The point is to represent the important infor- ation in a way that shows the interrelationships mong the ideas — the "big picture."

Although the form can vary, each of the three rganizational patterns has a typical graphic epresentation:

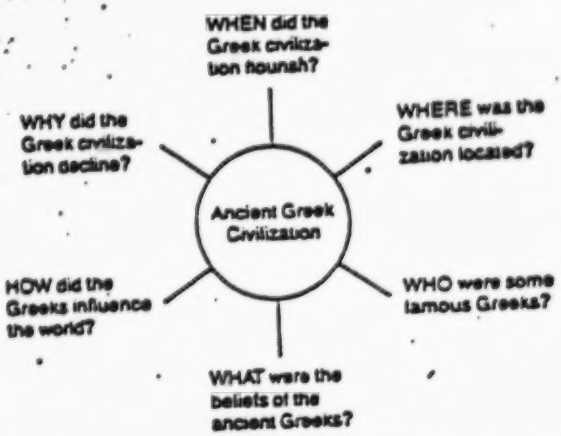


Descriptive Graphic Organizer. The typical repre- sentation of a description looks somewhat like a wheel, with the topic or concept as the hub and the examples or attributes as the spokes. For example, Ginn Social Studies, Grade 4, "America's Regions and Regions of the World," Chapter 9 discusses the topic "Earning a Living in the Northeast" by giving several examples of ways of earning a living in the Northeast. The graphic organizer might look like this:



In the case of a description that does not consist of examples, the information that appears on the spokes consists of important characteristics, or "main ideas," about the topic. A useful way to identify the main ideas is to start with the standard question starters: Who? What? When? Where? Why? and How? For each of these question starters, decide which *particular* question, if any, taps important information about the topic.

For example, consider the topic of ancient Greek civilization from Ginn Social Studies, Grade 6. Some of the important questions addressed in the textbook appear in the following graphic display:

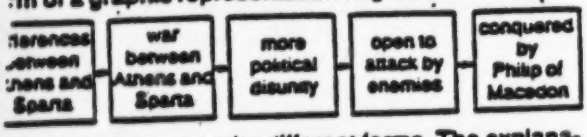

WHEN did the Greek civilization flourish?
WHERE was the Greek civilization located?
WHY did the Greek civilization decline?
Ancient Greek Civilization
HOW did the Greeks influence the world?
WHO were some famous Greeks?
WHAT were the beliefs of the ancient Greeks?

Comparative/Contrastive Graphic Organizer. For comparison/contrast, the typical representation is a table or matrix. The topics to be compared or contrasted and the important characteristics on which the topics are to be compared or contrasted constitute the two dimensions of the table. As with descriptions, the important characteristics can be identified by asking the Wh– and How questions about the topics. For example, Ginn Social Studies, Grade 5 discusses the European discovery and exploration of the New World. One way of organizing the information graphically would be in the following manner:

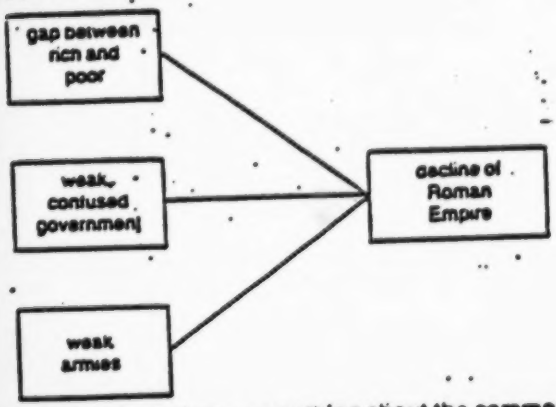
European Nations Involved in Exploration			
WHO were the important explorers?			
WHEN did they explore?			
WHERE did they explore?			
WHY did they explore?			
WHAT was the outcome?			

formation in social studies textbooks is often organized in three ways: as escriptions, as comparisons and contrasts, and as explanations.

Explanatory Graphic Organizer. The typical aphic organizer for an explanation would be a ries of events connected by arrows representing usal and sometimes temporal relationships. For ample, in the description of the ancient Greek civiltion, one of the questions is "Why did the Greek civzation decline?" The answer to this question in the m of a graphic representation might be as follows:



Explanations can take different forms. The explanaon depicted above is in the form of a chain. Other xplanations consist of several reasons for the same ffect. For example, Ginn Social Studies, Grade 6, The Eastern Hemisphere," Chapter 4 discusses hree reasons for the decline of the Roman empire. A ossible graphic organizer for this explanation ppears below:



Now that you know something about the common organizational patterns in social studies and their corresponding representations as graphic organizers, we turn to the question of why and how graphic organizers can be used to promote meaningful learning in the classroom.

Using Graphic Organizers in Stage 1 of Meaningful Learning: Selecting Appropriate Information

Why? As discussed previously, the first stage in meaningful learning is *selecting* information for further cognitive processing. Students cannot possibly learn all the information in their textbooks. They must be selective about what they learn.

Research suggests that, if left to their own devices, mature readers select for further processing the most important information (Meyer and Rice, 1984). Immature readers, however, do not. Their reading is more aimless, "catch as catch can," and does not result in meaningful learning.

Research has also shown that it is possible to guide students' selection and processing of information from text. Techniques such as providing objectives or questions prior to reading can focus learning: Students tend to learn what the objectives specify or the questions ask (Mayer, 1984).

Graphic organizers can also help direct and focus attention. And they have some advantages over objectives and questions. Objectives and questions can be vague and abstract, while graphic organizers are specific and concrete.

Introducing a graphic organizer before students read can have other beneficial effects. Much recent research has underscored the value of activating students' prior knowledge of a topic before they read about it (Tierney and Cunningnam, 1984). The graphic organizer can serve as a springboard for discussion about what students already know about a topic. They can be encouraged to generate hypotheses about both the organization and content of the graphic display. Then part of their purpose for reading becomes verifying or correcting their predictions.

How? There are two ways to introduce graphic organizers to students who are preparing to read; each way highlights important information.

(1) *Present a "blank" graphic organizer.* For example, students might be given the following before they read Chapter 7, "Early African Civilizations," of Ginn Social Studies, Grade 6, "The Eastern Hemisphere."

Early African Civilizations

	Kush	Ghana	Mali	Songhai
WHERE was it located?				
WHEN did it exist?				
WHO were some important people?				
WHAT were its cities like?				
WHAT were its outstanding features?				
WHY did the civilization disappear?				

(2) *Help students make their own graphic organizers.* Graphic displays can be particularly valuable if students help make them. The process of making up a graphic organizer before reading can reinforce important reading, studying, and thinking skills. In particular, students can practice using prior knowledge, skimming, and drawing conclusions in order to find

echniques such as providing objectives or questions prior to reading can ocus learning. Students tend to learn what the objectives specify or the uestions ask.

ppropriate organizational patterns and important categories of information. (Note, however, that students vill probably need to have experience with several eacher-made graphic organizers before they will be eady to do them themselves.)

For example, through guided discussion, a teacher ould encourage students to make their own graphic rganizers for "Early African Civilizations." The eacher might follow these steps:

(a) Elicit an appropriate organizational pattern. Comparison/contrast is reasonable because the itle indicates that the chapter will discuss several ivilizations.)

(b) Elicit column headings. (By skimming the chapter headings, students should be able to find the names of the four civilizations.)

(c) Elicit row categories. (By using Wh– and How question starters, prior knowledge of civilizations, and basic skimming techniques, students should be able to come up with appropriate questions for the row categories.)

Whether graphic organizers are presented to students or students make them themselves, the displays tell students a lot before they begin to read. In the example of "Early African Civilizations," the graphic organizer tells students that they're going to read about early civilizations in Africa and what those civilizations were, and it tells them some of the categories of important information they will read about. The graphic organizer directs students' attention to important information in the text and suggests an appropriate organization for that information.

Using Graphic Organizers in Stage 2 of Meaningful Learning: Organizing Information

Why? The second stage in meaningful learning is *organizing*, or building logical connections among ideas from the text.

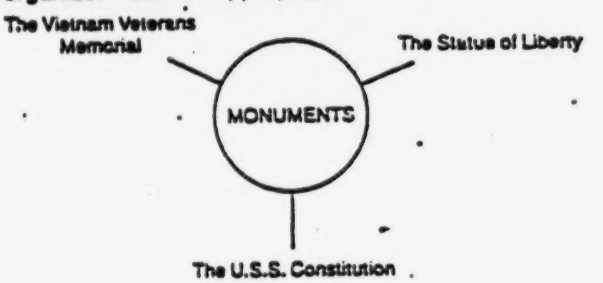
Research has shown that one way of helping students build logical connections among ideas from textbooks is to teach them a studying strategy tied to the text organization. In one study (Taylor, 1982), fifth graders who were taught to summarize textbook material according to the organization as highlighted by headings and subheadings remembered more of the material than did students who answered questions after reading. In another study (Taylor and Beach, 1984), seventh graders who were taught to make "hierarchical summaries" (similar to outlines) of social studies material remembered more than students who answered questions after reading or students who simply read and reread the material.

Graphic organizers can also be used as study aids tied to text organization. In producing graphic organizers, students *are* organizing — they are finding and recording logical connections among ideas from the text. Students are also *actively engaged* in learning; they can hardly be "tuned out" while producing a graphic organizer!

How? Graphic representations can be used in at least the following two ways to help students organize information from their reading.

(1) Students complete "blank" graphic displays provided by the teacher. These displays could be filled out by the whole class or a group through discussion, or by individuals as seatwork. For example, students might be asked to fill out graphic organizers for "Early African Civilizations," shown below, as they read Chapter 7 of Ginn Social Studies "The Eastern Hemisphere."

(2) Students generate their own complete graphic organizers. Once students are familiar with graphic organizers, they could make them as whole class, group, or individual activities. For example, fourth graders might be directed to make up appropriate graphic organizers for the section on "Monuments" in Chapter 9 of Ginn Social Studies. The following organizer would be appropriate.



Using Graphic Organizers in Stage 3 of Meaningful Learning: Integrating Information

Why? The final stage in meaningful learning is integrating the new information with what the student already knows. Research has shown that less successful students do not relate information in the text to previous knowledge, including information presented previously in the text (Bransford *et al.*, 1980; Sullivan, 1978). Fortunately, however, students can be taught to ask themselves questions designed to activate relevant background knowledge (Bransford *et al.*, 1980).

Graphic organizers can serve as tools for encouraging integration of information. As noted previously, these displays, presented before reading, can be focal points for discussion about students' prior knowledge of the topic and hypotheses about what they will read. After reading, graphic organizers can serve as bases for activities aimed at further integration.

How? Integration can be achieved through discussion or through writing. Here are two suggestions for using graphic organizers in integration activities.

In producing graphic organizers, students are organizing — they are finding and recording logical connections among ideas from the text.

(1) Students relate graphic organizers to their own experiences. For example, fourth graders who have worked with graphic organizers for "Monuments" might discuss or write about the example monuments given in the textbook or other monuments that they have visited or read about.

(2) Students compare and contrast a graphic organizer from the descriptive displays for chapters on with. One challenging integration activity is to have students make a comparative/contrastive graphic organizer from two descriptive ones having similar characteristics. For example, sixth graders might produce a comparative/contrastive graphic organizer from the descriptive displays for chapters on "Argentina" and "Venezuela" in Ginn Social Studies, Grade 6A — "The Western Hemisphere."

Concluding Remarks

Students often need help in learning from reading their social studies textbooks. They may need help at any or all stages of meaningful learning — selecting information to process, organizing the information into a coherent structure, and integrating the information with what they already know. This paper proposes that graphic organizers corresponding to the organizational patterns of the text could help students master each of the three stages of meaningful learning.

Graphic organizers can be used before reading to focus students' attention on important material and set a purpose for reading. During or after reading, students can organize what they have read by creating a graphic organizer for the material. Finally, graphic organizers can be used in discussions and writing activities designed to help students integrate the new information. Teachers who have used graphic organizers in their social studies classes report that the technique develops thinking skills, sparks discussion, fosters learning, and engenders an interest in social studies.

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Content area reading-writing lessons

Integrating reading and writing contributes to understanding and retention of knowledge. These lessons, using a feature matrix and other devices, show teachers how to help students extract and organize critical information.

Patricia M. Cunningham
James W. Cunningham

Content reading and writing lessons perform two primary functions. They increase student learning and they improve student *ability* to learn. For better or worse, students are expected to read books and articles and to write papers synthesizing the new information as a major means of learning content, especially at higher levels of schooling. The fact that the reading-writing connection has long been the foundation of higher education reveals a tacit understanding among educators that integrating reading and writing has much to contribute to student understanding and retention of knowledge.

Unfortunately, many students do not know how to extract the major ideas from their reading and then synthesize them, and many teachers are unsure of how to direct them. If we are to become nations of readers, "Teachers must instruct students in strategies for extracting and organizing critical information from text" (Anderson, et al., 1985, p. 71). This can begin in the elementary and middle schools.

Components of lessons

The components of a good reading comprehension lesson include: (1) helping students access what they know before reading, (2) setting purposes for their reading, (3) having them read in an active, purposeful manner, (4) helping them see what information they have correctly learned, and (5) giving them comprehension help if necessary (Cunningham, 1985).

February 1987

A good writing lesson is one in which the teacher (1) models for students what they are to do, (2) provides guided practice in writing, and (3) gives feedback which helps students see how they succeeded and how they might improve their writing next time.

The reading-writing lessons we will describe include the components of a good reading lesson and a good writing lesson. They are based on the reading of and result in the writing of informational text. In each case, an organizational device will be used to guide both comprehension and composition.

It is this organizational device which forms the link between reading and writing. The link reinforces the learning of both information and organizational structure. Moreover, the link mimics the assignments often required in higher levels of schooling when students must write a paper about a book or article they have read.

One organizational device, the feature matrix (Johnson and Pearson, 1984), will be described in detail. Others such as webs, outlines, or timelines could also be used.

A feature matrix lesson

A feature matrix is simply a device for helping students gather, compare, and contrast information for several items in the same category. For our example of a feature matrix reading-writing lesson, we have selected a section from a school science book (Abruscato, et al., 1980) which describes the earth's planets.

To prepare the feature matrix, read through the text and select the members of the category (in this case the 9 planets) and some relevant features which describe some, all, or none of them on which they may be compared and contrasted. Figure 1 shows a feature matrix based on the textual information in our example. It would be displayed to the students first in skeleton form, with none of the boxes filled in.

To begin the lesson, the teacher displays the feature matrix skeleton on an overhead transparency, the chalkboard, or a chart. The students construct the same feature matrix in their notebooks by writing the planets down the rows, drawing vertical lines, and writing in the features across the columns.

The teacher then leads the class to fill in their feature matrix based on what they already know about the planets. Each student puts a plus in the space where s/he believes the planet has that feature and a minus in each space where the planet does not have that feature. If the student has no idea whether or not the planet has the feature, the space is left empty.

The feature matrix shown in Figure 1 indicates what one student knew about the planets before reading. As you can see, this student believed that Mars, Mercury, and Venus were closer to the sun than Earth, that all others were farther from the sun, and that Jupiter, Neptune, Pluto, and Saturn were larger than Earth. Earth, Jupiter, Mars, and Venus were believed to have at least one moon, and Saturn to be the only planet with rings. Earth, Mars, Mercury, and Venus were known to orbit the sun, but the student was unsure if the others did.

Comparing matrix responses

Now the students read the science text section on the planets. They are clear about their purpose for reading: to confirm or change the pluses and minuses and to fill in empty spaces. As the students read, erasers are used liberally and quiet cheers and groans are indications that they are actively comprehending rather than passively getting through the pages.

When they have finished reading as well as confirming, changing, and adding to their individual matrices, the

teacher asks their help in filling in the class feature matrix. Students nod their heads if they have a plus, shake their heads no if they have a minus, and shrug their shoulders to show they still don't know after reading. If there is a consensus about the right answer, the teacher puts a plus or minus in the box.

In many cases, there will be disagreement. This indicates to the teacher that the students have failed to comprehend some portion of the text and the teacher draws a circle in the box to indicate a "hole" in comprehension.

When the class feature matrix has something in every box, the teacher points out each box with a hole in it and gives the students 2 minutes to return to the text to find something to read aloud that will change a hole into a plus or minus. No one is allowed to raise his or her hand until the 2 minutes are up.

Proving each point

When the time ends, the teacher asks students to state a point about one of the boxes and prove their point by reading from the text. It is during this proving based on the text that much reading comprehension instruction takes place.

Some students do not believe that the text tells if Pluto is larger or smaller than Earth. A student reads the sentence "Pluto probably is the size of Mercury" (Abruscato, et al., 1980, p. 221). That student reasons that since we know Mercury is smaller than Earth, Pluto probably is, too. Often, the points missed or misunderstood are those which require inferences.

As students return to the text and explain their reasoning, the inferencing process is being modeled. The teacher keeps this process from becoming frustrating by helping when necessary to point out text parts to read or by providing possible explanations for how the needed inferences can be made. The crucial element is for the teacher not to help until and unless the class really requires it but not to hesitate when they do.

Several spaces on the feature matrix may still have circles after reading. These holes can serve as motivation for individual students or the class to consult other, possibly more recent, sources. Library research is thereby integrated into classroom discussion and driven by class questions.

Knowing what they don't know

The completed feature matrix which each student has in a notebook and which the teacher has on display contains efficiently the major information and comparisons (we hope) the students have learned about our 9 planets.

The reading portion of the feature matrix reading-writing lesson is now complete. During the prereading completion of the feature matrix, students decided what they already knew about the subject and, equally importantly, figured out what they didn't know. This "knowing what you don't know" is crucial because it appears that as soon as we learn something, we think we always knew it.

The purpose for reading is clear to all. Furthermore, students want to read for the purpose since they want to see how well they guessed prior to reading.

The completion of the class matrix allows the teacher to see where comprehension broke down and help students explain how they figure out the meaning of what they read. All students should be able to complete their matrix as class members read portions of the text and explain how this proves or disproves that a planet has a particular feature. Furthermore, all class members get immediate feedback on how well they read for the stated purpose. By hearing others read and explain the text, they learn how any

Figure 1
Prereading feature matrix as filled out by an individual student

Planets in Earth's solar system

	Closer to sun than Earth	Larger than Earth	Has moon	Has rings	Orbits the sun	Inner planet
Earth	—	—	+	—	+	+
Jupiter	—	+	+	—		—
Mars	+	—	+	—	+	+
Mercury	+	—		—	+	+
Neptune	—	+		—		—
Pluto	—	+		—		—
Saturn	—	+		+		—
Uranus	—			—		—
Venus	+	—	+	—	+	

+ = student believes feature is true of that planet
— = student believes planet lacks that feature
Matrix items will later be checked against reading material.

misunderstanding they made can be avoided next time.

Writing 1-2 days later

The writing part of the lesson usually occurs a day or so later. For the writing portion, the teacher leads the group to contribute sentences toward a paragraph about one of the planets. Students then work in small groups or individually to create a paragraph about another planet.

Here's how this process might take place. The teacher says:

> Today we're going to use the information on our feature matrix to write a paragraph about one of the planets. Our paragraph will have five sentences. The first sentence will let everyone know what our paragraph is about. The next three sentences will tell specific information about the planet. The last sentence will give some indication of our feelings about or our general impressions of this planet.
>
> [Teacher displays feature matrix transparency and chooses a planet to write about.]
>
> I'm going to write my paragraph about Venus. My first sentence should get Venus into its larger topic.
>
> [Teacher points to Planets in our Solar System.]
>
> Remember that we wrote Planets in our Solar System to show that this was the big topic. Our first sentence shouldn't go over here into the details about Venus [points to pluses and minuses along Venus's row] but rather should get Venus into its topic. We call this first sentence the topic sentence.
>
> [Teacher writes on chalkboard or chart: *Venus is one of the 9 planets in our solar system.*]
>
> Now, we want some specifics about Venus for our next three sentences. Let's read across our feature matrix and see what we know about Venus.
>
> We know that Venus is closer to the sun than the Earth, is not larger than Earth, has no moons or rings, orbits the sun, is one of the inner planets. I'll want to include these facts, but I may include others I remember from my reading to make my paragraph more interesting.
>
> I think I'll write a sentence which tells about Venus's size. My feature matrix has a minus in the larger than earth section, but I remember that in Venus's case, this doesn't mean Venus is smaller. I remember that Venus and Earth are about the same size. That'll make a good second sentence.

[Writes: *Venus and Earth are about the same size.*]

Now, our matrix tells us that Venus is closer to the sun, and I remember that that makes it hotter than the earth. I'll combine these two facts for my next sentence.

[*Writes: Venus is hotter than the Earth because it is closer to the sun.*]

So, I want one more sentence that gives some important facts about Venus. What haven't I yet told that's important?

[Teacher writes: *Venus, along with Earth, Mars and Mercury, is one of the inner planets.*]

Now, the final sentence of a paragraph can be written in different ways. Sometimes it sums up the other things in the paragraph. Sometimes, it gives the writer's feelings or impressions about the topic. Sometimes, it gives a final, fascinating fact.

I'll write something about Venus that I think many people find interesting.

[Writes: *Venus is called the evening star and is the favorite planet of many people because on a clear night it can be easily seen.*]

This finishes the teacher modeling part of the paragraph writing lesson. Next, the students write a paragraph about one of the other planets. They are reminded to have their first sentence get their planet into its topic, which is always in the upper left corner of the matrix. Three sentences then tell specific information about their planet. These specifics can come from the feature matrix or from what they know. A final sentence sums up or ends the paragraph in an interesting way.

Sharing their writing

As students write their paragraphs, the model paragraph and the feature matrix are both available to them.

When the paragraphs are written, volunteers can read their paragraphs to the class. Some paragraphs sound much like the model paragraph, which is to be expected in the beginning. After several lessons, however, students are more willing to have their paragraphs diverge somewhat from the model.

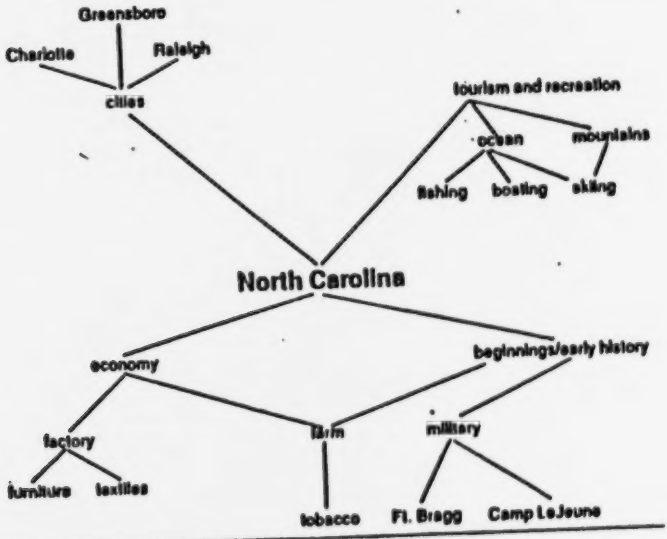
As students volunteer to read their paragraphs, the teacher can encourage them to add information not on the feature matrix and to use complex sentences by comments such as: "I really liked your last sentence because you told us that Mars was called the red planet, and that's a fascinating fact we didn't have on our feature matrix," and "Read your third sentence again ['Uranus, like Saturn, has rings']—the way you combined the information on both Uranus and Saturn's rings was very efficient."

Feature matrices are an excellent organizing device when information on several members of a category is compared and contrasted. This is a common writing pattern in science, health, and social studies. It is easy to imagine a feature matrix in health where various foods were listed as members and features included such information as low carbohydrate, low calorie, high fiber. Often in social studies, regions, countries, or political leaders are compared and contrasted.

When students use a feature matrix to determine what they know before reading, set their purpose for reading, and integrate the new information with the old after reading, they are engaging in active comprehension. The feature matrix page in their notebooks contains the important content they can review before a test. When this information is used as the basis for paragraph writing, students remember the information better because organizing and writing promotes retention. In addition, they become better writers.

As students gain skill at writing paragraphs, they can combine paragraphs into a 1 page composition. Before they do this, the teacher should model how to create an opening paragraph which tells the composition's general topic and a final paragraph which sums up or ends the composition in an interesting way. Students should see that the

Figure 2
A class's prereading web about a region



All items contributed by students from their prior knowledge.

composition's opening and closing paragraphs are similar to the opening and closing sentences of a paragraph.

Other organizational devices: Webs, outline, timelines

Not all information lends itself to feature matrix organization. Often, a topic is discussed in terms of its subtopics. A discussion of North Carolina, for example, would probably have information about its founding and early days, major industries, areas of employment, major cities, tourism, and recreation.

A web (Figure 2) is an excellent organizational device for text which has subtopics about a major topic. Just as in the beginning of the feature matrix reading-writing lesson, the teacher records all student contributed information on the class web. Individual students write on their own web those contributions they believe are valid.

Figure 2 shows what the class web might look like after students had contributed what they knew about North Carolina prior to reading.

Students then read for two purposes: to see what of the information they put on the web is actually discussed in the text and is correct, and to see what new information they can add. As they read, new information is added to the appropriate strands of the web. As in the feature matrix lesson, the text is consulted and read aloud to clarify confusions and resolve disagreements.

The writing part of the lesson also parallels that demonstrated for the feature matrix lesson. The teacher writes a model paragraph based on the sen-

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tences given by the students for one strand of the web. The students then work in small groups or individually to write a paragraph based on another strand. Paragraphs are read by volunteers and the teacher points out sentences which are particularly communicative.

Webs are, in reality, outlines without all the complicated numbering and lettering. Students could also learn to outline information and then write from that outline.

A timeline is another good organizing device, for information in which sequence and dates are important. Have the students list the crucial dates in order and fill in any guesses they might have about important events on those dates. The timeline completed after reading allows them to write a chronological paragraph.

A solid preparation

Teachers who use these reading-writing lessons report that students read more actively as they read to confirm what they think they know and to find new information. As they explain the text to prove a point, they see how language works and become more aware of how they can approach the task better next time.

During the writing part of the lesson, students who have never really understood what a paragraph is see the writing of a paragraph modeled and then write a similar paragraph of their own. They learn that writing is an aid to understanding and remembering content from their textbooks.

Reading-writing lessons make it possible for a teacher to plan a single lesson that teaches reading, writing, and content. This integration teaches more content and prepares students to learn content more independently in higher levels of schooling.

Patricia M. Cunningham, a former author of The Clip Sheet, teaches integrated content area reading and writing instruction at Wake Forest University in Winston Salem, North Carolina. James W. Cunningham, an advisor for Reading Research Quarterly, *teaches reading, writing, and language arts at the University of North Carolina in Chapel Hill.*

References

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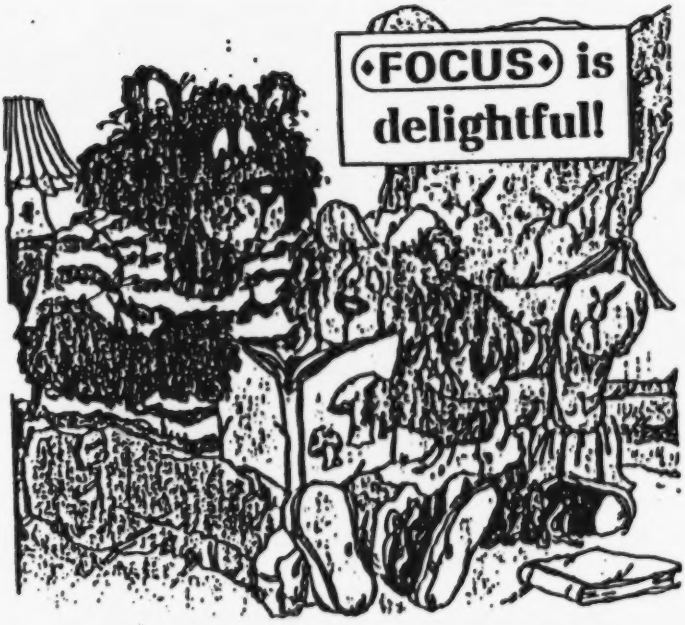
Cooperative tasks have special benefits

Cooperative interaction in school tasks (as opposed to either competitive or individualistic efforts) has been shown to promote higher achievement, especially the discovery of superior strategies for reasoning about things. This effect from cooperative activities seems to hold true among children of all ability levels, regardless of whether they are cooperating or competing with others of the same or differing ability.

(For a series of interesting studies on the effects of cooperative, competitive, and individualistic school tasks, see the work of David W. and Roger T. Johnson.)



There's no missing the sheer beauty and delight on every page of FOCUS: Reading for Success. It's the brightest and happiest-looking program around. And the content is so consistently outstanding, you'll find it hard to believe it's a transitional basal.

But it's what's "between the lines" of every selection—*the intensive instruction on grade-level skills*, the special attention to oral language and concept development, the organization paced to the needs of students who require *more time on task*—that will really delight you.

FOCUS may be used alone or co-basally. Free correlations are available for FOCUS and the following programs: Ginn; HBJ; D.C. Heath; Holt; Houghton Mifflin; Macmillan; and, of course, Scott, Foresman Reading: An American Tradition. Write to Jill Dannemiller, Reading Product Manager, 1900 East Lake Avenue, Glenview, Illinois 60025.

Focus: Reading for Success—When learning to read isn't as easy as A B C.

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a tradition to trust
Scott, Foresman and Company

APPENDIX E

SAMPLE OF ORGANIZATIONAL FRAMEWORK AND COORDINATOR'S LOG

SEPTEMBER 1986

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	(24)	25	26	27
28	29	30				

OCTOBER 1986

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	[15]	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

NOVEMBER 1986

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	[12]	13	14	15
16	17	◇18	19	20	21	22
23	24	25	26	27	28	29
30						

DECEMBER 1986

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	(17)	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

JANUARY 1986

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	(28)	29	30	31	

FEBRUARY 1987

S	M	T	W	T	F	S
1	2	◇3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

MARCH 1987

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	[11]	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

APRIL 1987

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	(15)	16	17	18
19	20	21	22	23	24	25
26	27	◇28	29	30		

MAY 1987

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	[20]	21	22	23
24	25	26	27	28	29	30
31						

JUNE 1987

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	(16)	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

ıtative Calendar: Exc. in Ed. Grant Proj.

e-hour after school meetings: O

ɔt. 24
:. 17
ı. 28
:il 15 (5 hours)
ıe 16

hour after-school meetings: □

:. 15
'. 12
n. 11 (2 hours)
y 20

3 other hours will be added*?

lour (½-day) Meetings: ◇

'. 18
ɔ. 3 : Secondary InService Days
:il 28

ive hours of project work will be
:ermined by Project Coordinator and Project
.bers, according to progress during the year.

WINCHESTER HIGH SCHOOL
WINCHESTER, MASSACHUSETTS 01890

Reading, Writing, Speaking and Listening Across the Curriculum

24 September 1986

Agenda

1. Calendar (tentative) for the Project

2. Purpose/Focus
   a. First Quarter: assessment, initial writing activities - Holistic grading -
   b. Year-long goals

3. Philosophical approach: The need for reading/writing across the curriculum; the active learner.

4. "Methods Menu" handouts

5. Coordinator's schedule, location, availability, etc.

Notes

Vocab ex — The crossword / word search
Do teachers supply reading guides?
Do they have students create them?
Answering Q in complete sentences?

Mention Success of Jr. Hi Program — Dialectic Notes —

Write about a field trip —

Math — The "Story" of the problem —
— The Storyline —

For our evaluation: What is each teacher's starting point? —
(Some reading/writing?)
None?
Expectations?

(*) ↔ Class lists — Common Students — ?

I

Dept'l. Dissemination - Trains planned Etc. Mtgs —
End Oct Early Feb Late April

WINCHESTER HIGH SCHOOL
WINCHESTER, MASSACHUSETTS 01890

MEMORANDUM

ading/Writing Across the Curriculum Committee

Bil Johnson

ednesday, Sept. 24 meeting

Sept. 25, 1986

d like to thank everyone, once again, for serving on this committee. I ink the quality of the group was obvious to all of us yesterday and consider self very fortunate to direct such a group in a pilot program like this. ease return the ditto with your daily schedule to me by Friday, Sept. 26. ist to reiterate, and further clarify, our initial objectives:

) Develop writing strategies in the First Quarter which incorporates Content you are working on.

) Monitor those strategies so we can gauge the success/failure of various methods for future dissemination.

.) Something that may not have been mentioned clearly yesterday, but which would be an implicit objective, would be to judge whether incorporating reading/writing strategies used throughout the year are at least as (if not more) successful as methods previously used to teach the same Content.

I would like to meet with each person individually at least once before October 10 (Firday before Columbus Day weekend) to discuss First Quarter Writing Strategies being implemented.

Once again, I am available periods 2,3,5,6 and can try to make accomodation for other times if necessary. During those periods I am usually in the Project Office, which is on the second floor, one door down from the Radio Station as you head toward the Foreign Language wing.

Bil

WINCHESTER HIGH SCHOOL
WINCHESTER, MASSACHUSETTS 01890

M E M O R A N D U M

TO: Project Committee

FROM: Bil Johnson

Re: Activities

DATE: Sept. 30, 1986

I would appreciate members of the committee letting me know what their initial writing activities, in relation to the Project, are. Please try to see me (or let me know in writing, and then see me) before October 10th.

Reminder: Please get me a copy of your daily class schedule so we can arrange mutually convenient meeting times.

Thanks.

BJ

READING & WRITING ACROSS THE CURRICULUM

AGENDA - WEDNESDAY OCTOBER 15, 1986

1) Evaluation of the project - "outside" evaluator & criteria.

2) Activating Prior Knowledge - are we using this concept?

3) Short/Long term individual goals - submit to coordinator

4) Computer labs: availability & benefit - to be discussed.

5) Composing vs. writing - clarification of concepts.

6) Class lists - are there common students among us?

7) Control groups? - can we sample our non-participating students?

8) Research papers - some resources and some questions.

9) Activities Exchange - who's doing what within our committee?

10) Weekly assignments - submission to coordinator, details to be discussed.

Wednesday's meeting will be held in B201 in the English wing from 2:15 to 2:45.

The above agenda is cryptic, I know, but everything will be covered quickly and effeciently (I hope).

I would also like to schedule short meetings with Committee Members for Thursday and Friday (Oct. 16, 17).

Thanks,

BJ

Bil Johnson

WINCHESTER HIGH SCHOOL
WINCHESTER, MASSACHUSETTS 01890

READING AND WRITING ACROSS THE CURRICULUM

Follow-up Notes on Wednesday, October 15th's meeting

1) Please document all methods, assignments, strategies used in relation to the project.
2) Please submit to me, on a weekly or bi-weekly basis, all reading and writing assignments so I have a sense of who is doing what in relation to the project.
3) Interview times with Jim Squire, our project evaluator, for Thursday November 6th will be arranged at your convenience. He wants to talk to everybody for about 20 minutes each.
4) Wibhin the next few weeks, please submit to me what you see as short and long term goals in relation to your participation with the project.
5)Please submit a class list(s) of those groups you are working with in relation to the project so I can see if we have any "common" students among us.
6)I will Xerox WRITING! magazine's article on Research Papers and distribute copies FYI.
7) If it is possible, please assign a group you are NOT using in the project a writing exercise also given your Project Class(es) so we can have a "control group" sample. I'll keep these on file and we will repeat the procedure in April or May. The results will undoubtedly prove how valuable the Project is!

WINCHESTER HIGH SCHOOL
WINCHESTER, MASSACHUSETTS 01890

MEMORANDUM

To: Project Committee
From: Bil Johnson
Date: October 29, 1986
REMINDERS:
Next Thursday, Nov. 6th - Meetings with James Squire
Project Evaluation interviews

Wednesday, Nov. 12th, 2:30-3:00pm - Committee Mtg.

Tuesday, Nov. 18th - ½-day Inservice Meetings
PLEASE SUBMIT assignments & anecdotal notes about what you are doing in relation to this project. A First Quarter summary, if you will.

FYI - New Literature
I have just received a series of booklets on reading in various disciplines. They are available in my office.
(Please excuse my typing!)
Titles: Teaching Reading in the Social Studies
Classroom Strategies for Secondary Reading
Teaching Reading and Mathematics
Improving Reading in Science
Teaching Reading through the Arts

WINCHESTER HIGH SCHOOL
WINCHESTER, MASSACHUSETTS 01890

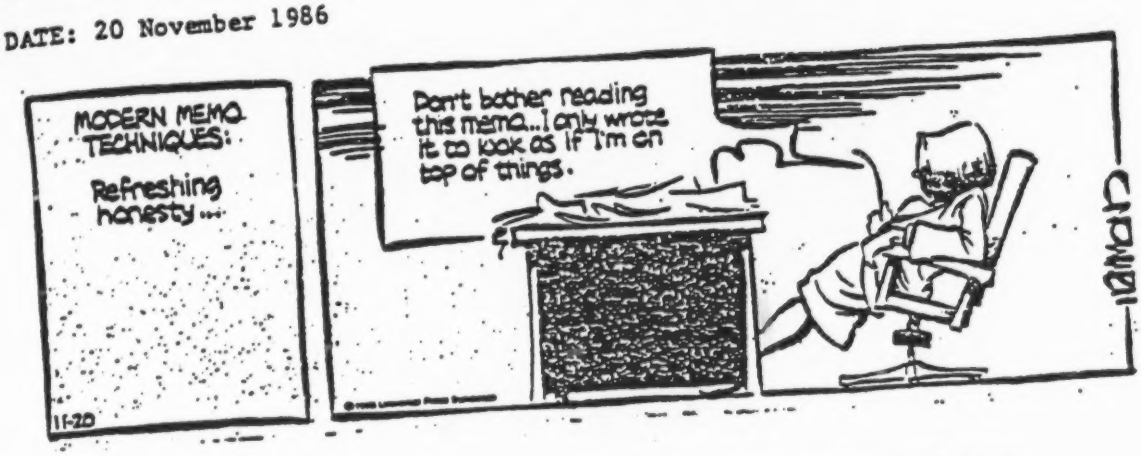
MEMORANDUM

TO: The Project Committee

FROM: Bil J.

RE: Tuesday's workshops

DATE: 20 November 1986


MODERN MEMO TECHNIQUES:
Refreshing honesty...
Don't bother reading this memo... I only wrote it to look as if I'm on top of things.
11-20

I'd like to thank all those who participated in the ½-day workshops on Tuesday and encourage those who weren't able to attend to discuss what went on with those who were there.

Our next scheduled meeting is Wednesday afternoon, December 17th from 2:30 to 3:00 in E201. A memo with an agenda will precede that meeting.

If people did not get a chance, or as much of a chance as they would have liked, to examine books and materials Tuesday, all those resources are in the Project Office and available to you at your convenience.

I have just received two new books and a second copy of one which I think is fairly good. These are:

To Compose - Thomas Newkirk, ed.

Teaching language and study skills in secondary Science by Lesley Bulman

Language Across the Curriculum by Michael Marland (2nd copy)

Please feel free to drop in and "check out" any of these or the other materials.

Again, thanks for Tuesday and for your efforts in relation to the project.

Bil

WINCHESTER HIGH SCHOOL
WINCHESTER, MASSACHUSETTS 01890

Schedule for November 6th (Thursday)

James Squire (Project Evaluator) Meetings

1st Period: 8:05-8:25 - John Walker

2nd Period: 8:45 - 9:05 - Irene Michelsen

3rd Period: 9:30-950 - John Limongiello

4th Period: 10:15-10:35 - Randee Martin

10:40 - 11:00 - Dick Thorne

5th Period - Lunch

6th Period:-Jerry Burdulis 12:30 - 12:50

Helen Nagle 12:50 - 1:10

7th Period: Sue Austin 1:15-1:35

Lorin Maloney 1:35-1:55

All meetings will be held in the Project Office on the second floor.

If there are any problems with this schedule, please see me ASAP.

Thanks,

Bil

WINCHESTER HIGH SCHOOL
WINCHESTER, MASSACHUSETTS 01890

IN-SERVICE WORKSHOP - TUESDAY, NOVEMBER 18th

READING/ WRITING ACROSS THE CURRICULUM COMMITTEE

We have been asked to call for subs for ourselves as soon as possible for this Workshop —— I would recommend telling the Substitute Line EXACTLY how many classes you need covered for the day and let them worry about the details. If there is any problem with this, let me know ASAP. Thanks.

Workshop will meet in the TELEVISION STUDIO on the Second Floor

8-11 a.m.	12-3 p.m.
John Walker	Helen Nagel
Randee Martin	Lorin Maloney
Sue Austin	John Limongiello
Dick Thorne (when possible)	Jerry Burdulis
	Irene Michelsen

Attached are articles you may want to peruse before tomorrow.

WINCHESTER HIGH SCHOOL
WINCHESTER, MASSACHUSETTS 01890

M E M O R A N D U M

TO: Reading/Writing Across the Curriculum Committee

FROM: Bil Johnson

DATE: December 3, 1986

RE: Committee "business"

Our next meeting is scheduled for Wednesday, December 17th in B201. It will begin at 2:15 p.m. and run for not more than one hour.

Realizing it is the Holiday Season and a bit crazy, I must, nonetheless, point out that this is the 4th week of the 2nd quarter and documentation for activities by Content Area Teachers involved in the Project is sadly lacking. Weekly or bi-weekly anecdotal teacher journal/log entries would be helpful, if people can't come up with anything else.

Before the December 17th meeting I need to receive, from each committee member:

a) An account of what you have done in the 2nd quarter — specific methods, ideas, approaches, activities, etc.

b) Samples of student activities in relation to the project.

c) Comments on any literature you have examined in relation to the project.

d) Goals for the remainder of the 2nd Quarter and perspective on what you might do for 2nd Semester.

e) Suggestions or questions for December 17's Agenda.

Please submit all of the above to me by Friday, December 12th.

WINCHESTER HIGH SCHOOL
WINCHESTER, MASSACHUSETTS 01890

REMINDER - Tuesday, December 16th.

Reading/Writing Across the Curriculum Committee Meeting

Wednesday, 2:15 p.m., E201, English Wing
(Dec.17th)

Agenda focus: Reading, reading strategies

WE will see a short videotape and discuss methods, and strategies of implementing more effective reading strategies to support writing-to-learn concepts.

The meeting will NOT go beyond 3:15 p.m. at the latest!

If, for some reason, you cannot attend, please let me know by the end of the day tomorrow.

Thanks,

Bill

Hayden Austin

WINCHESTER HIGH SCHOOL
WINCHESTER, MASSACHUSETTS 01890

M E M O R A N D U M

TO: Reading and Writing Committee
From: Bil Johnson
Re: Second Semester/Administrivia
Date: 14 January 1987

A belated Happy New Year to everyone! Knowing the Holidays and Final/Mid-Term exams are a difficult period for most, I have tried to stay out of everyone's way recently. With Second Semester approaching, however, we have to begin to focus on the Reading/Writing Across the Curriculum Project once again. Attached is an article that was in the January 11th Sunday Globe. Nothing spectacular, but it reinforces what we have been doing and saying.

Our first meeting for the second semester had been scheduled for Wednesday, January 28th. It is being shifted to Monday, January 26th because we have a chance to listen to and meet Dr. Dolores Durkin. She is meeting with the Reading Comprehension Inservice people and we have been invited to join them at 3:15 in Room B205 in the English wing. If you cannot attend this meeting, please let me know. That same afternoon I will be available from 2:30 to 3:00 in B201 of the English Area and would appreciate a chance to talk to committee members at that time.

Other Second Semester Meetings:
We have an option for another set of ½-day meetings on February 3rd, a Tuesday. I will discuss this with the committee and David Ackerman next week.
March 11th - 2:30-3:00
April 15th - 2:15 - 3:15
April 28th - 3-hour half day, if we wish
May 20th- 2:30-3:00
June 16th - TBA

I hope everyone has a creative and productive, but stress-free (is that possible?), second semester.

Bil

PLEASE RESPOND TO THIS AS EARLY AS POSSIBLE, AND NO LATER THAN FEBRUARY 12th.

Reading & Writing Across the Curriculum - Mid-Year Review

1. What do you think was the most positive aspect of your work on this committee during the first semester -- academically & personally.

2. What was the least positive aspect (academically/personally)?

3. What is your perspective on the project as we begin 2nd semester? Your goals, etc.?

In any fashion you feel comfortable with (anecdotal, a list, notes, etc.) please respond to the following.

Was the projector director helpful? In what ways, if so?
Were things too non-directive?
Were there too many/few meetings?
Was too little/much covered at meetings? Were they organized in a manner that was helpful, logical, etc.?
Should we have more meetings as a group? As individuals?

In what ways can I be more helpful? More materials? Individual conferences?
Change the structure of group meetings (suggestions, please)?

Any additional/random thoughts about the project, the director's role, your reactions to the Committee and the its operation would be helpful.
Any and all recommendations would be helpful.
Please feel free to be frank, painfully honest, whatever.

Thanks,

BJL

[illegible]

[illegible]

AGENDA

March 11, 1987 - 2:00

2 pm Faculty Meeting: a) Workshop, hands-on structure with Committee members as "table leaders." Mixed tables (departmentally), facilitate cross-section discussion.

b) Materials, etc. each "table leader" may need will be ordered, ditto'd, etc. as requested.

Jim to meet briefly on April 8th for final questions, clarifications, etc.! (2:15-2:30)

Clinton: Jim Squire has arranged the following dates for his presentation:

April 28 (a Tuesday) - to talk to students

May 19,20,21 (Tues.,Wed.,Thurs.) to meet with the Committee

Member of the Senator

1) Documentation: We need as much documentation as possible — this can be as simple as a note to me about what assignments you have given which relate to the project, as well as actual copies of student work.

b) Reading Interchanges Materials Distributed (Mar./87)

1.) Comprehension Chart (Dolores Durkin) - Reading as a Meaning Comprehension

2.) Lamberston's Problem Models: "Video Graphic Organizers" "Elaboration" in Prose "Point of Focus" "Prose Structure for Informative Text"

In to the Committee: Since we haven't had much time to read and talk about organizing, structuring, etc. until [illegible], I will be content several things. One is that I am very pleased and think positive we will be having the Junk Mail and [illegible] — or "real" problem is [illegible] and I will gladly reschedule [illegible] this with us, perhaps then we [illegible] Secondly, I [illegible] Thirdly, the Committee had been thinking here [illegible] things in relation to the project — if you get a chance to speak with them I'm sure it would be very worthwhile!

WINCHESTER HIGH SCHOOL
WINCHESTER, MASSACHUSETTS 01890

25 March 1987

TO: Reading & Writing Across the Curriculum Committee

FROM: Bil

RE: Attached artible, old business

The attached ditto by Beau Fly Jones (can you believe that name?) was sent to us by Jim Squire. As with all else, take a look and see if there is anything which might be useful to you in the classroom.

— Please remember: DOCUMENTATION!

J. Squire will be here to talk to students April 28th,
to teachers May 19,20,21.

We meet next on April 8th, 2:15-2:45 in B201

"Our" Faculty meeting is April 9th.

— I'll be attending the NCTE spring convention in Louisville this Thursday, Friday, Saturday where several seminars are on our project — maybe there'll be some new things for us. I will be in touch with individual committee members next week regarding that and everything/anything else that springs to mind (yours or mine).

Enjoy the Spring weather (without forgetting we live in New England, of course).

Thanks.

Bil

WINCHESTER HIGH SCHOOL
WINCHESTER, MASSACHUSETTS 01890

READING AND WRITING ACROSS THE CURRICULUM COMMITTEE

We will have our last meeting on Wednesday, June 10th at 2:15 in Room E201.

Please bring any books or materials related to the project then. If you have any materials you want to turn in sooner, I'd appreciate it as I'm trying to compile a Source-Book Bibliography for the project's final report.

In relation to that final report, could you please respond to the following questions/statements (in writing) and get those responses to me by Friday, June 5th.

1. In anecdotal form, please comment on your view of the project: your overall impression of its worth and effectiveness and your recollection of what you thought it would be in relation to what you found it to be.

2. What did you find to be the most positive aspects of the project, regarding your classes, interaction with Committee colleagues, interaction with departmental & school-wide colleagues, etc. Did it have an affect on your teaching or your approach to teaching (or even your perspective on teaching)?

3. What were your least positive reactions, in relation to the same criteria as #2?

4. What suggestions, recommendations, comments can you make as we look to next year (and thereafter — even considering budgetary constraints)? Is it worth continuing? Why/why not? In a different fashion? How so?

5. Would you continue to participate or advise next year's project, whatever form it would take? Why/why not? What incentives (other than $$$) might be offered to make participation attractive (beyond the obvious educational value which, with 60c gets you a ride on the T) ?

Thanks for everything!

Bil

Bil J.